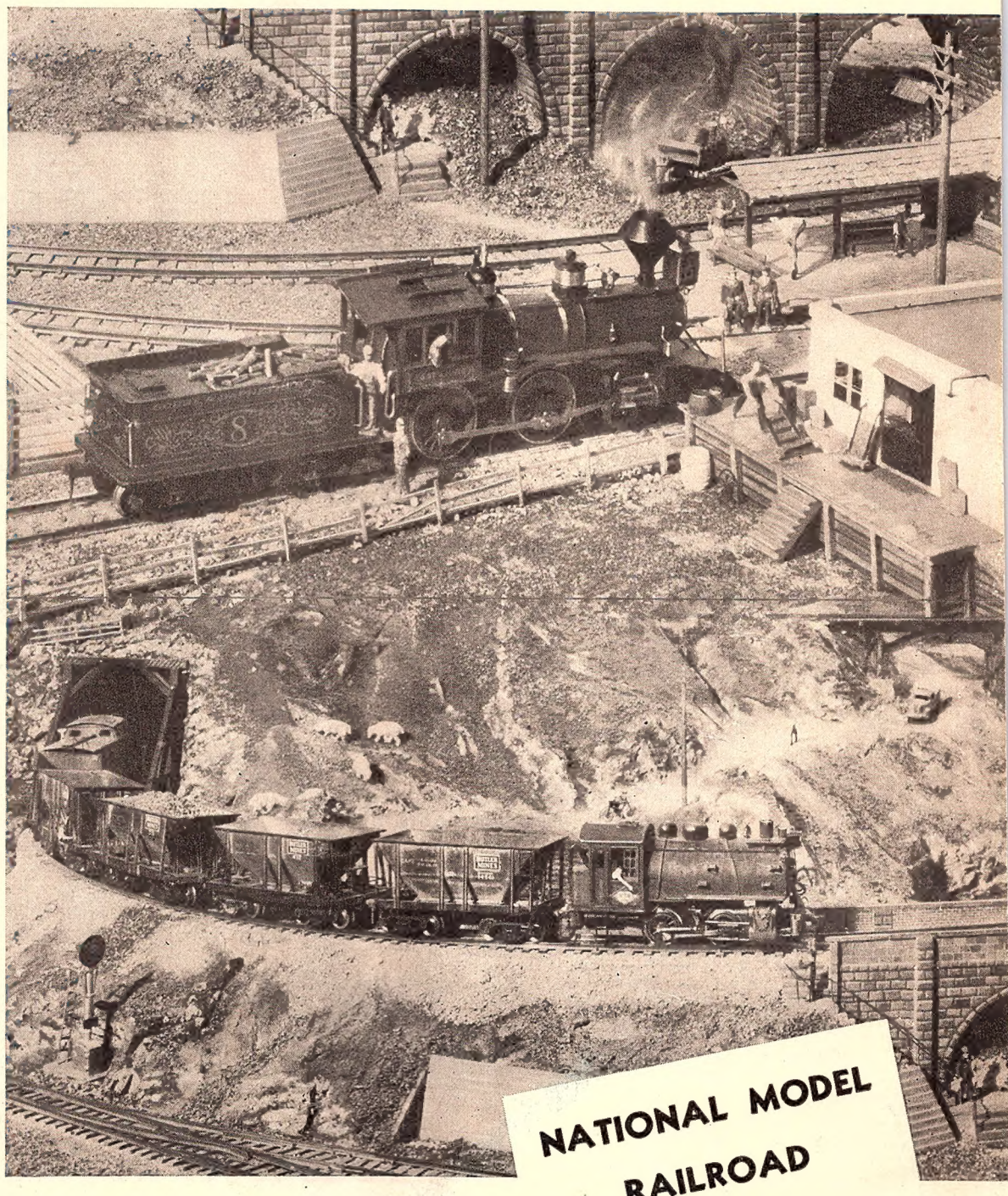
THE MODEL CRAFTSMAN

DECEMBER 1947
35 CENTS



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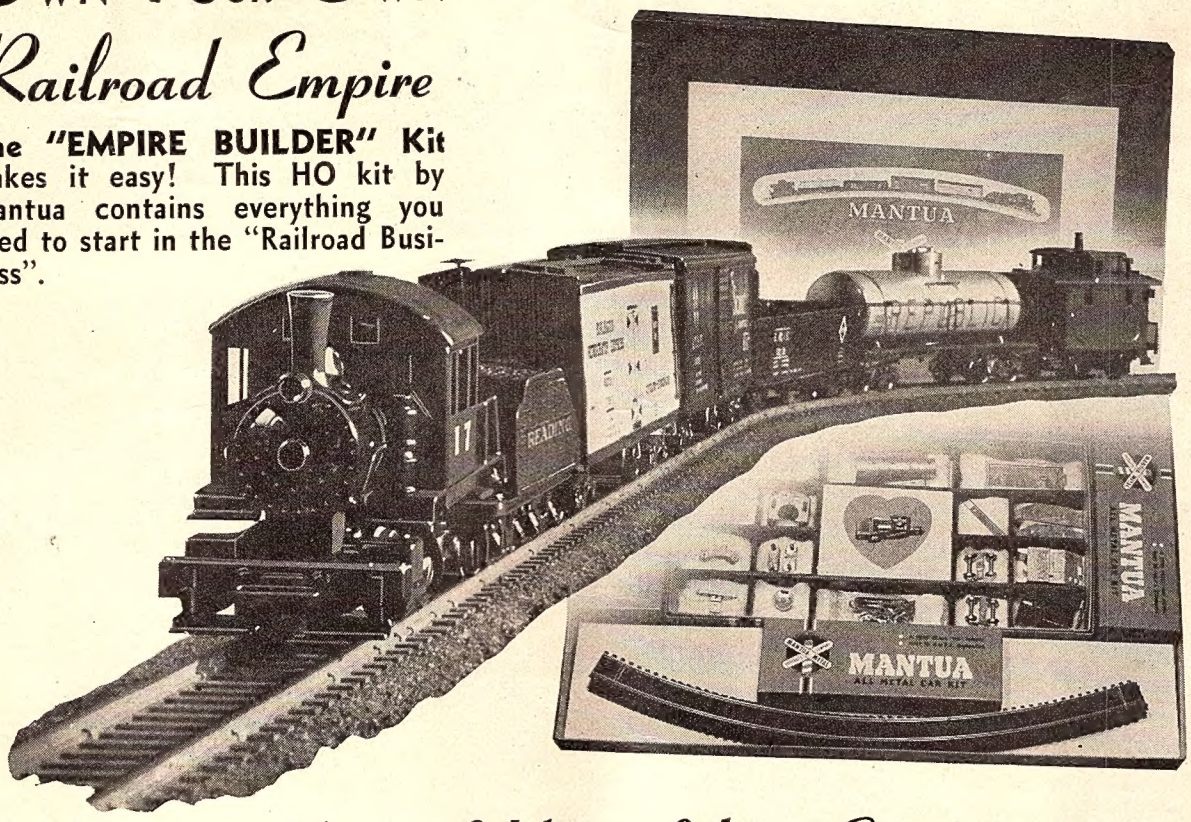

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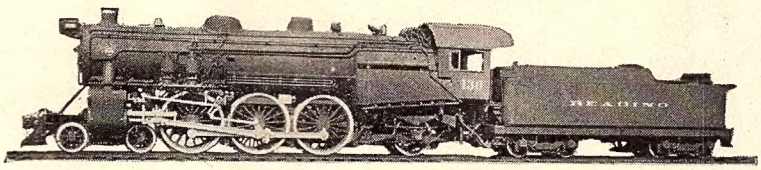

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VOL. 16, NO. 7 DECEMBER, 1947

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GET MARRIED, BUB!

That magazine of yours is certainly swell, you have a good variety of articles to keep any rail fan happy. You have published a good selection of scenery and right-of-way equipment articles, BUT, *how* do you dust and keep all those intricate pieces of equipment clean. My layout shares the cellar with an old coal furnace and the soot is sure playing ——! Can you give me any suggestions as to how to keep it clean. . . . Stan Porta, Huntington, W. Va.

(*Ed's note: We would suggest you get married Stan, but maybe some of our other readers can suggest an easier way out!*)

CRAMPED FOR SPACE

I was recently introduced to your magazine by a proprietor in a model shop and I think your magazine is excellent. I have been interested in trains for two years now (HO gauge) only I have no place to build a permanent layout. I have a bachelor's apartment shared with another gent and the cleaning lady insists it be taken up every time she cleans. Even so I get a lot of real pleasure from railroading.

I have 74 feet of HO track, 2 steam type locomotives, 17 freight cars, 3 cabooses, 3 chair cars and one observation car, all homemade. . . . Bill Preston, Canton, Ohio.

ROAD IS ACCURATE

I have been building a model O gauge pike for over a year, and although space is limited, the amount of realism and accuracy of detail fully makes up for the lack of space. My track is three rail with an outside third rail of thin steel wire laid on wood ties. Six scale freight cars, two tinplate locos and nine passenger cars complete my list of rolling stock.

I am one of those bugs on realistic scenery and everything is built to exact ¼ inch scale. I have modeled a complete town, with business district, firehouse, municipal building, residential area and schools. At the present the citizens of my model town are heathens, but a church is my next scheduled project. . . . Bert Connoly, Tampa, Fla.

SHAME NOW GONE

If *Model Craftsman* does nothing else, it has accomplished a big thing in my life. You see, I used to be ashamed of my model railroad. No one ever actually told me I was playing with toys, but some of the hints made my blood boil. Now that I know other *men* are just as *wacky* I can easily pass off my friends remarks. . . . A. R. Ralston, East Orange, N. J.

ANOTHER HOO FAN

In your September issue, there is an article on "Micro Trains" by C. Norstrand. By coincidence, I have been building models of exactly the same scale and gauge for the past year. Of course I was very interested in the photos of manufactured equipment of this size. My greatest difficulty has been with the making of trucks and insulations of wheels, besides which, I have had to use square cross-section wire for my rails.

I am a student at Georgia Tech, and as a last word, I would like to pass on the compliments of the boys in the dorm. You can well imagine the number of model builders in an engineering school, and may I say that M. C. seems to satisfy all the boys. Keep up the great stuff! . . . *Austin Baer, Atlanta, Georgia.*

FRONT COVER

This month we feature the HO layout of John Allen, Monterey, Calif. Two photos have been blended together to make this excellent shot. In the background "Sargent Ennis" is getting up steam at Gorre station while some of the waiting passengers look on. In the foreground, an ore train is winding itself around a hair pin curve and up a 2% grade on the G-D lines.

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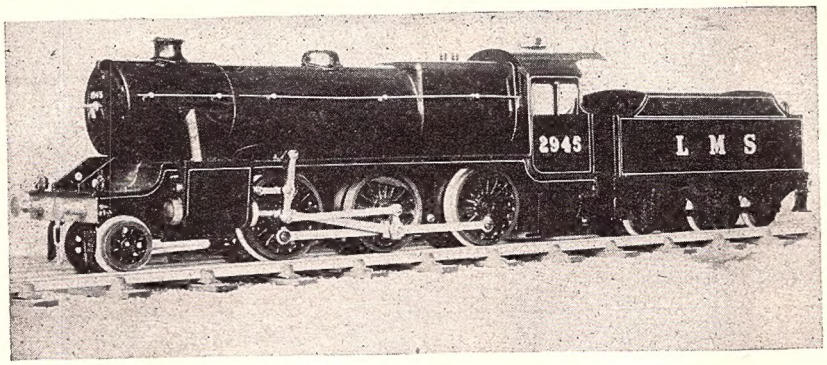

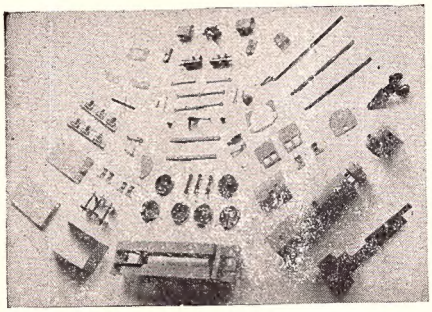

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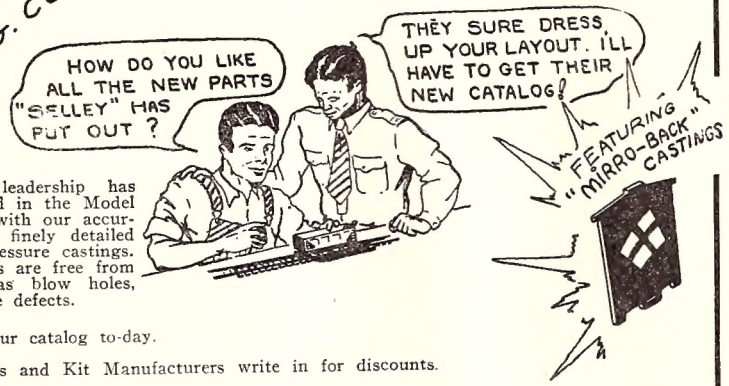
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RAILROAD CLUB NEWS

INDIANAPOLIS, IND. The Indianapolis HO Model R. R. Club held its Autumn Social on October 18th in the Union Station clubroom. A program of travel movies and cartoons was enjoyed by the sixty members present, followed by a general discussion and refreshments. At the meeting, President Everett Lehnert announced the start of layout construction under direction of W. Robert Lamon.

HAWTHORNE, CALIF. On October 11th, the Railroad Boosters, an organization dedicated to the promotion of public interest in railroads took over and ran the Centinela Valley O Gauge Railroad for twelve hours of scheduled timetable operation. A special train was prepared, an old fashioned 4-4-0 with all the colors of the rainbow accurately placed, by Lee Ridgman, founder of the C. V. Lines. This special train had four gondolas loaded with camera addicts, a flat car for souvenirs, and last but not least was the open end car which, like all rail fan specials, was almost empty. Miniature figures were placed all over the engine pilot, steps, running board, top of cab and tender. A model of a typical rail fan "special," to the delight of everyone.

Everyone had a good time, the results—fun, pleasure, no broken bones, one cornfield meet, and a great desire to do it again. (They mean all except the cornfield meet!) This was the third annual meet of the "Boosters" at C. V. and they hope to make it a yearly event. . . *George Arnold.*

ALTOONA, PA. One of the most interesting displays for Penna. Week was that of the Altoona Model R. R. Club in the windows of one of the city's leading stores. The exhibit contained many models built by the club since its organization in 1943. The window contained a passenger train hauled by a Pennsy GG1, a Northern Pacific freight, another Pennsy passenger train drawn by a K4, a B. & O Mike and a Gas Electric car hauling a milk car as a trailer. Other features were a Pennsy freight with an M1-A engine, a Pennsy B6 with a work train, deluxe passenger train pulled by an Erie Pacific, complete in all details.

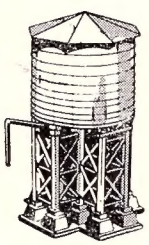
All the models were built during the meetings held in their club rooms on the third floor of 1121 Eleventh Ave. The club is 100% NMRA. The present officers are: Harry Pheasant, Pres.; Harry Roberts, V.-Pres.; Clarence Holton Sec.; Roger Milbe, Treas.; and Harold Goodman, Gen. Mgr. The club rooms are open to the public the first Monday of each month, and to anyone interested in joining, every Monday at 7:30 P. M

MONTREAL, CANADA. The Montreal Model R. R. Club holds weekly meetings every Monday, Wednesday and Friday evenings. They feature point-to-point operation with cut back for continuous operation. They have about 700 feet of main line track with numerous

(Continued on page 44)

See and Hear

LIONEL TRAINS in Action



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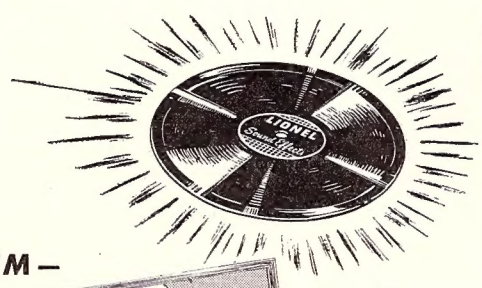

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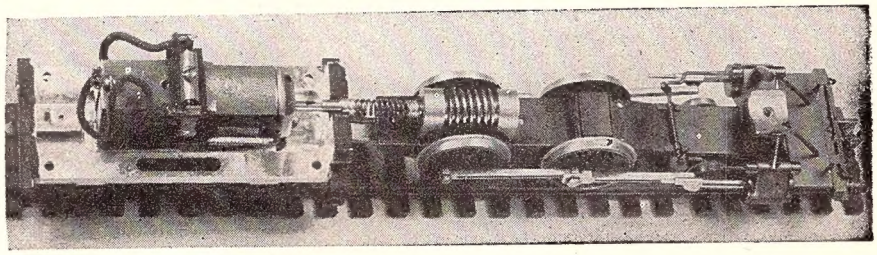
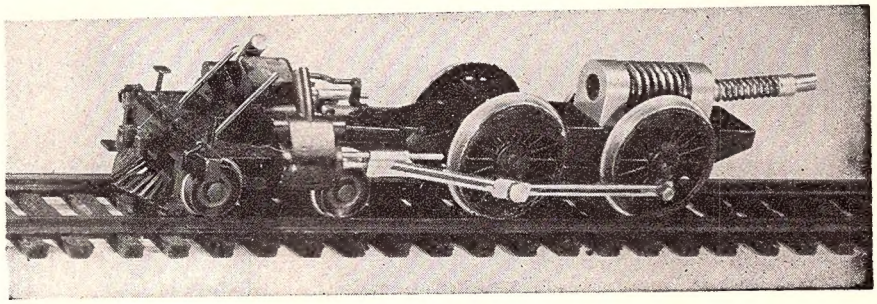
HOW TO BUILD A MODEL RAILROAD

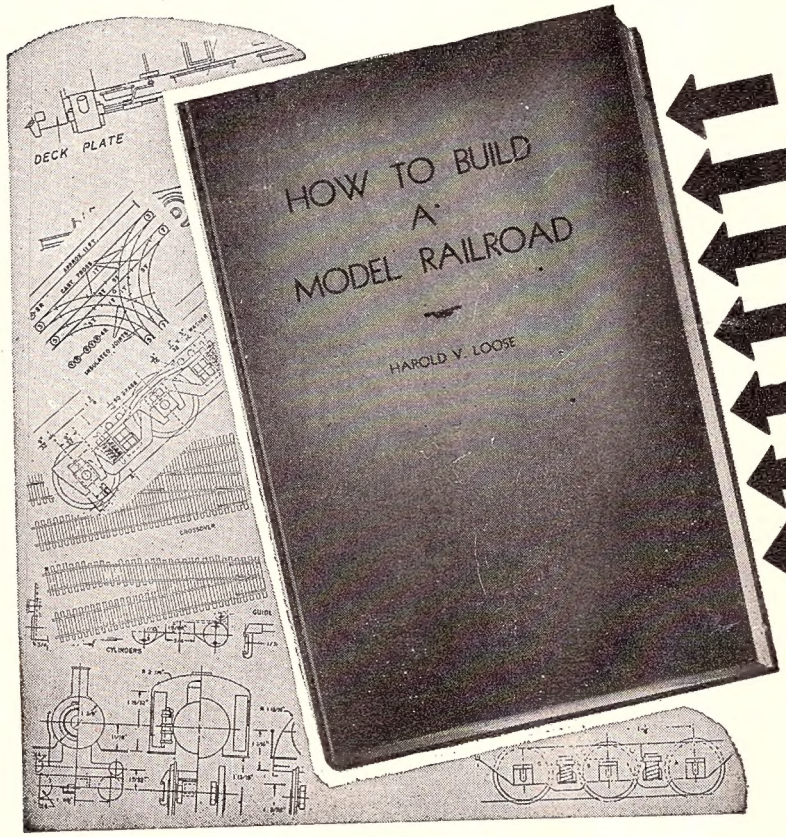
A BEGINNER'S MUST — A REFERENCE BOOK FOR VETERANS

This new edition of HOW TO BUILD A MODEL RAILROAD has been COMPLETELY revised and is right up to present day standards. It has many new plans and illustrations (more than 75 are included). "How to Build" will answer all the questions asked by the man who is starting a miniature layout as well as many of the problems encountered when a model railroad has gotten under way. The spiral binding permits pages to lie flat, a great convenience while working.

Whether you are a beginner or an experienced enthusiast, your library is not complete without this fine book.







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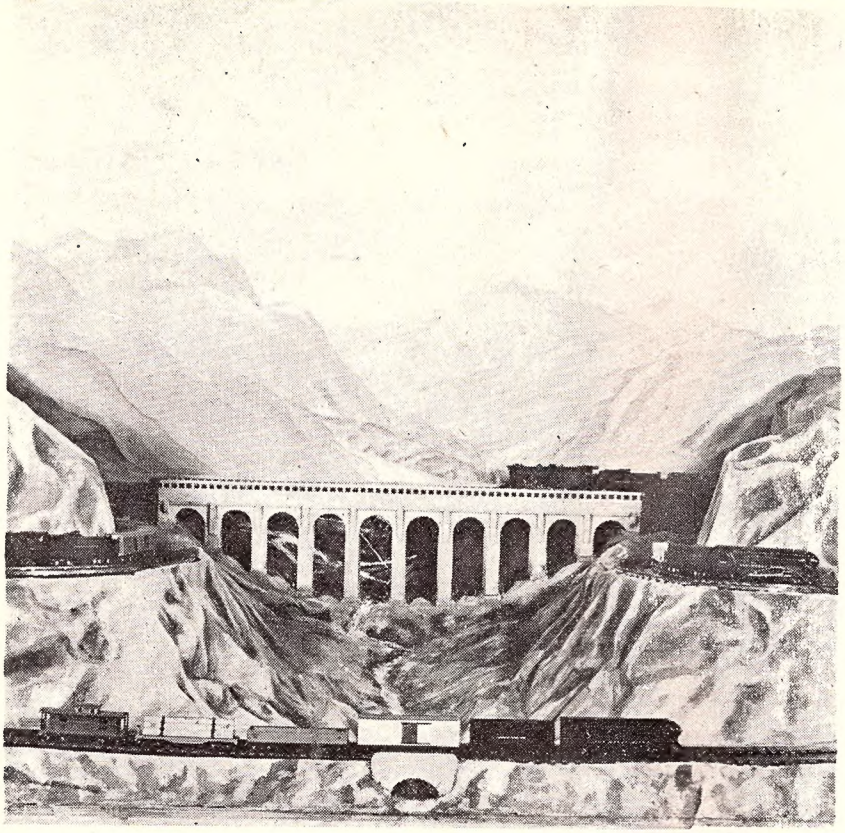


Rode's Photo Service

Build A Realistic Arch Bridge

By RICHARD R. COLE

REALISTIC bridges enhance any model train layout. The accompanying sketches show a simulated concrete arch bridge which can be easily built by any amateur craftsman. A photograph visualizes the finished appearance of the bridge, while Fig. 1 shows more of the constructional features, and how it is mounted on the set to blend into the landscaping.

A stream of running water will add to the realistic effect. The stream bed can be made by pouring Plaster-of-Paris into a shallow trough, and afterward chiseling out the formation of the bed. Several coats of shellac or varnish will make the plaster water-proof, and it can then be painted appropriately, and landscaped with miniature trees, rocks, fallen logs, etc. For realism, the stream bed should be made with a "forced perspective"—in other words, it should taper off to an imaginary vanishing point. The "forced perspective" will be discussed in more detail when taking up the bridge construction.

To sustain the perspective, the base of the abutments of the bridge should be higher than the foreground of the set. The arches of the bridge are cut from boards wider than the actual height of the bridge. In Fig. 1 this cut is called the "valley contour line". The lower sections of the boards are mounted permanently on the set, later to serve as a "cradle" to receive the bridge structure. It also serves as a support for the wire screen when landscaping.

Now let us take up the actual building of the bridge. Consult Figs. 2, 3, 4, and 5. All the dimensions given are approximately scaled for "O" gauge or "S" gauge trains using 3/16" scale model rolling stock. For either of the foregoing gauges lay out the patterns on 1" squares. For "OO" gauge use 5/8" squares; for "HO" gauge use 1/2" squares.

Fig. 2 shows the plan. Notice especially that the side-walls of the arches taper to a vanishing point. This point should be eight to ten feet back from the front center of the bridge. Without elaborating on intricate optical laws, let it be said that the usual model looks exactly like a model, because it lacks the same perspective that the eye receives from the real thing. To more nearly duplicate the true perspective, it can be built into the model itself. This gives the illusion of solidity and remoteness.

To bring about the "forced perspective" in the bridge, the pattern of the rear arch piece is slightly "squeezed in", as it were. This will be noted in comparing the back and the front elevations. (Figs. 3 and 4)

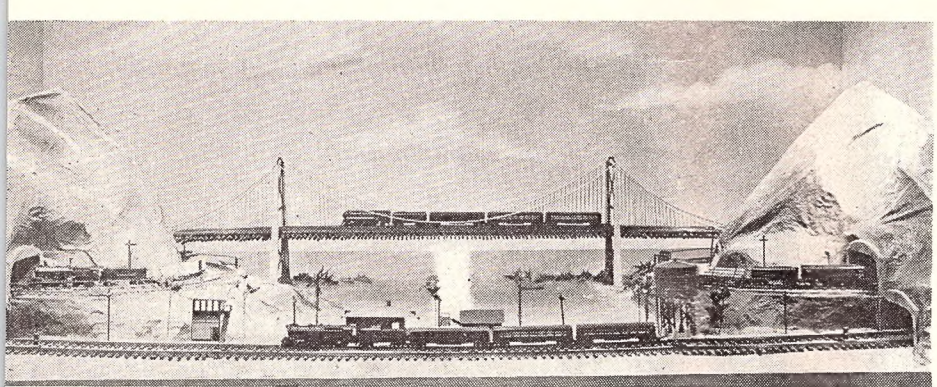
After the boards have been cut along the contour line, most of the arches can be cut out on a small band-saw if the pattern is laid out on both sides of the board. However, you may have to resort to a key-hole or coping-saw for the middle arches. The fitting of the cross-members and top piece is quite obvious. 1/4" wood can be used for the top and 1/2" is recommended for the rest of the structure.

Fig. 6 gives a close-up of the ornamentation details of the bridge. The construction of the over-hang and railing is shown in Fig. 7. These are made up as units and glued and nailed to the bridge structure. You can easily compute suitable dimensions for this according to the scale bridge you are building. The same holds true for the ornamental blocks in Fig. 8.

The final construction work consists in closing in the arches. This is done by lining the arches with card-board. Use thin card-board or bristol-board which will conform to a curve without cracking. Hold it in place with glue and small tacks. Since the arches taper, a little carving of the edges will be necessary.

The final operation is to simulate concrete. First use a sealer on the entire structure. Shellac or lacquer sealer will

(*Continued on page 50*)



On the left is a very deceptive forced perspective. The piers of the bridge are set at a 15 degree angle. The water surface curves upward to meet the back curtain and gives the illusion of a remote horizon. The actual depth of the set is only 60". The glare of the setting sun adds to the effect.

FIG. 1

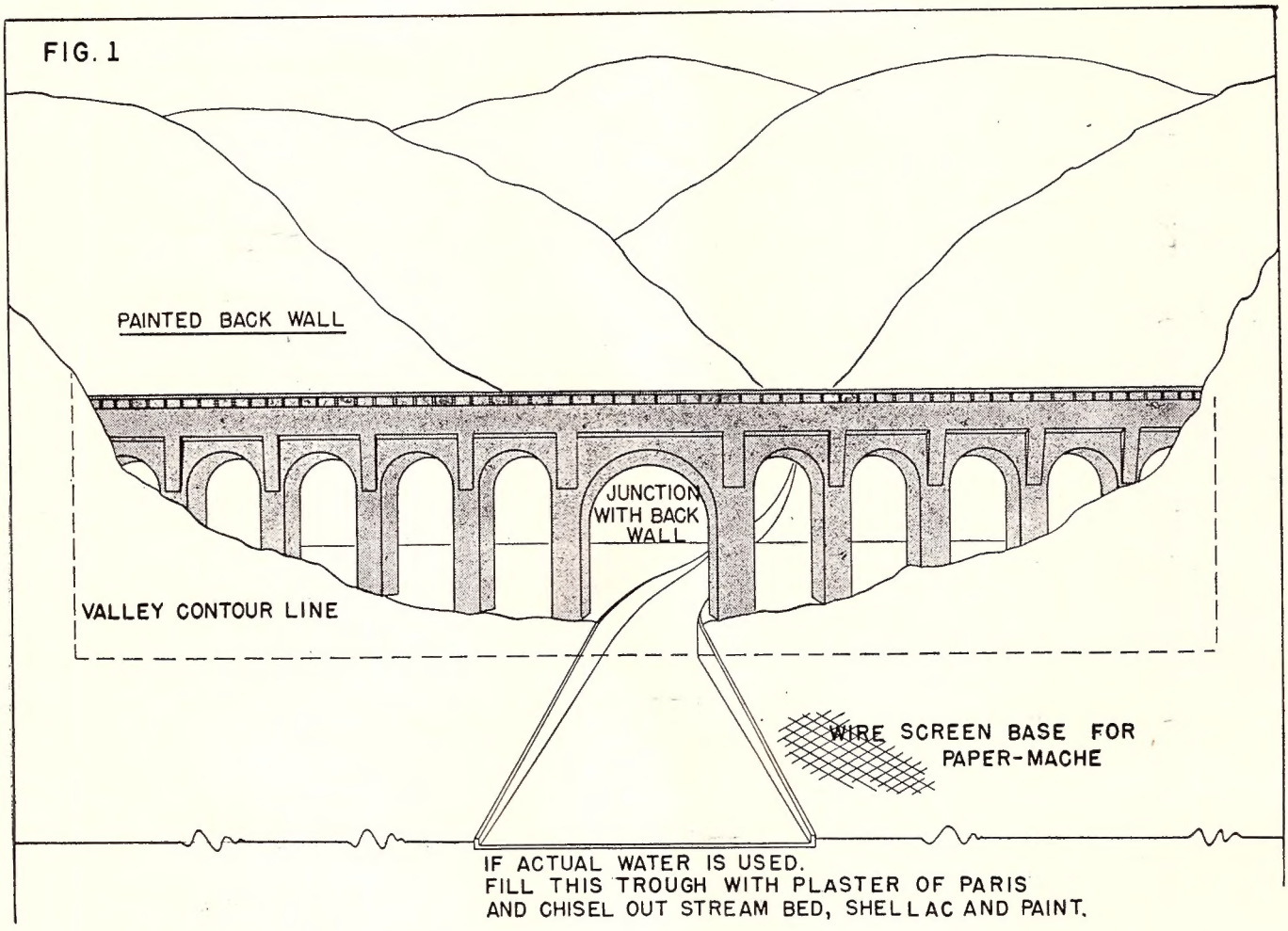

PAINTED BACK WALL
JUNCTION WITH BACK WALL
VALLEY CONTOUR LINE
WIRE SCREEN BASE FOR PAPER-MACHE
IF ACTUAL WATER IS USED.
FILL THIS TROUGH WITH PLASTER OF PARIS
AND CHISEL OUT STREAM BED, SHELLAC AND PAINT.

FIG. 6

CONCRETE EFFECT IS PRODUCED BY PAINTING THE WHOLE STRUCTURE WITH LIGHT GREY ENAMEL AND SPRINKLING WITH FINE SAND WHILE ENAMEL IS TACKEY

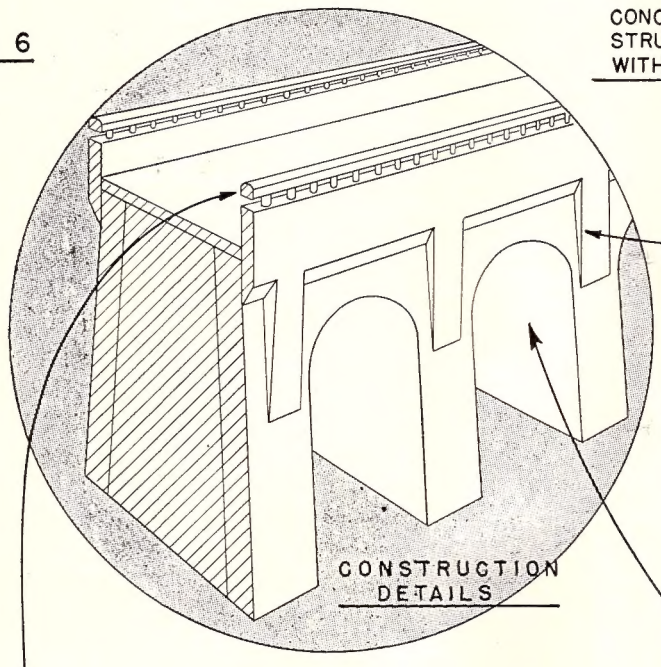
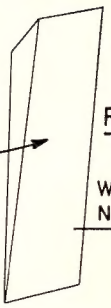


FIG. 8

WOOD BLOCKS GLUED AND NAILED TO STRUCTURE



INSIDE SURFACE OF ARCHES IS FORMED WITH CARDBOARD GLUED AND TACKED IN PLACE

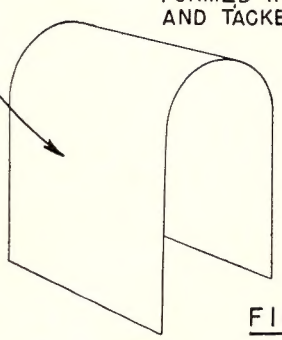
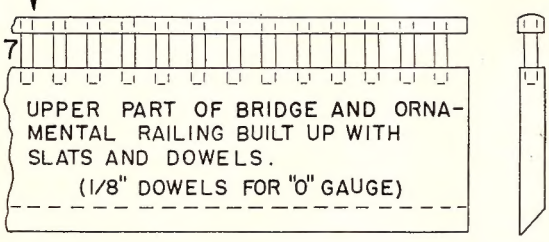


FIG. 9

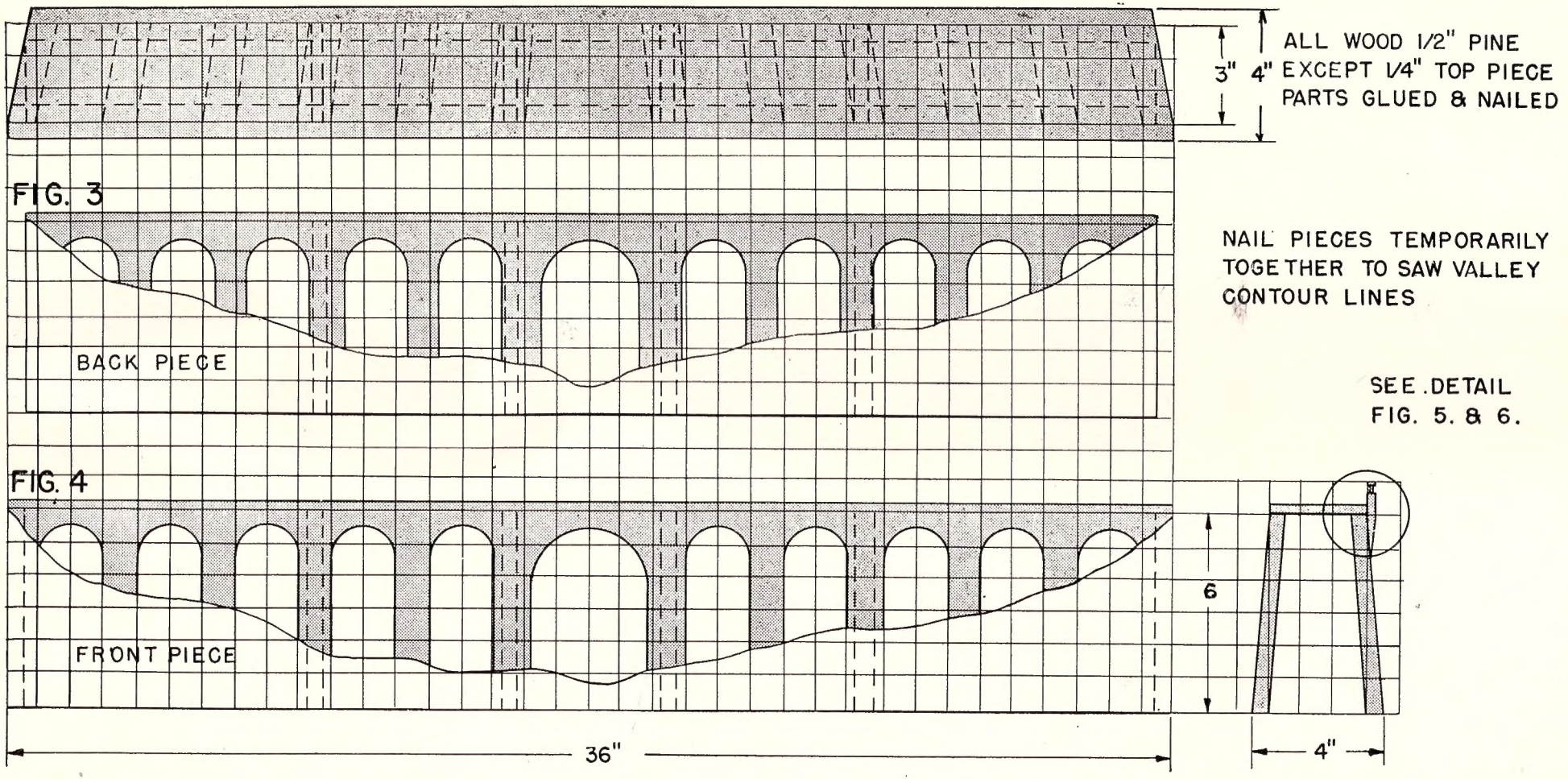
FIG. 7



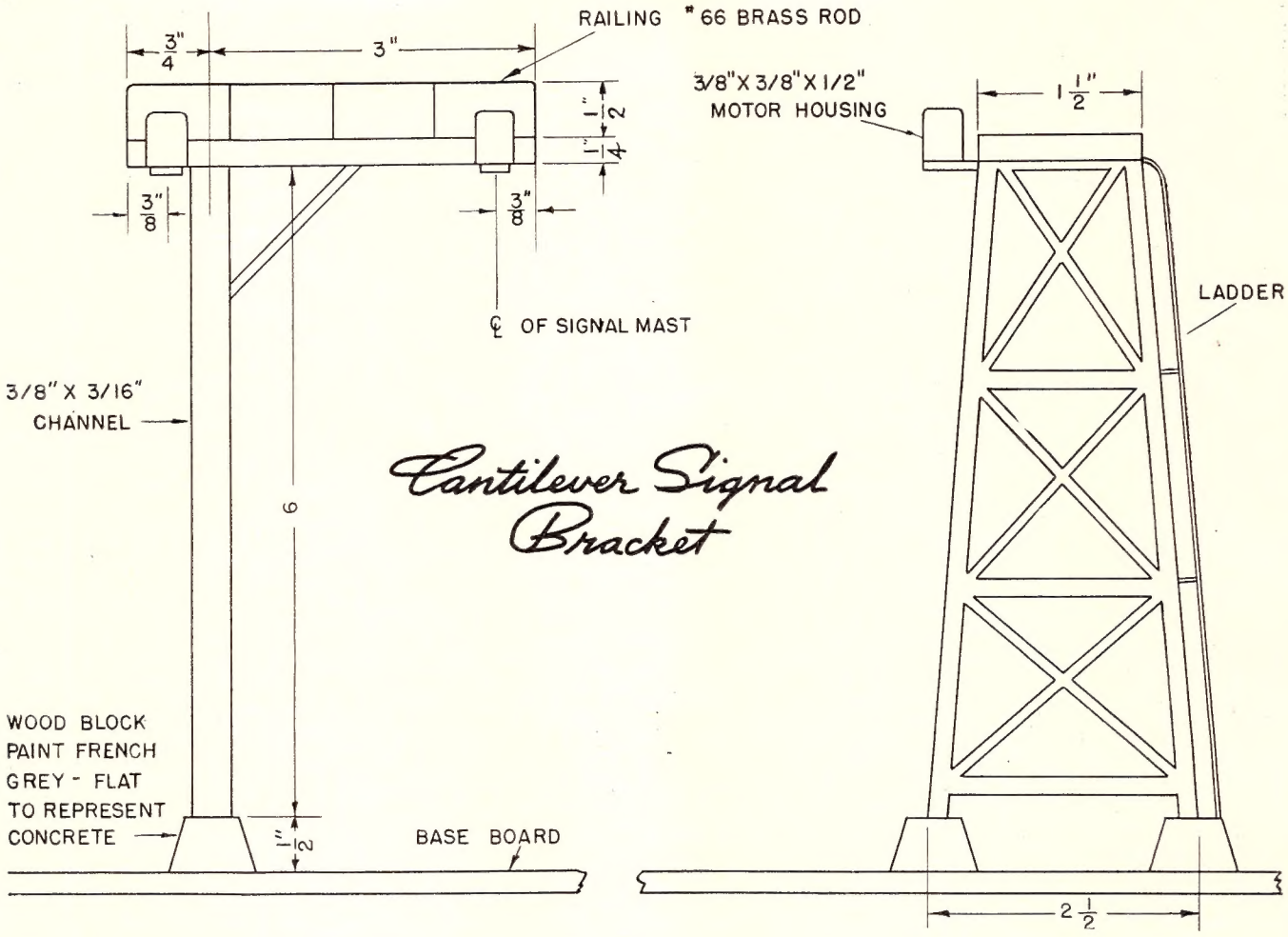
UPPER PART OF BRIDGE AND ORNAMENTAL RAILING BUILT UP WITH SLATS AND DOWELS.
(1/8" DOWELS FOR "0" GAUGE)

TO PRODUCE THE ILLUSION OF MASSIVENESS AND REMOTENESS THE STRUCTURE IS MADE WITH A FORCED PERSPECTIVE. NOTE IN THE PLAN BELOW THAT THE WALLS OF THE ARCHES POINT TO A REMOTE VANISHING POINT. FOR "O" GAUGE (AS BELOW) THE VANISHING POINT IS EIGHT FEET FROM FRONT, CENTER OF BRIDGE. FOR "O" OR "S" GAUGE TRAIN USING 3/16" SCALE ROLLING STOCK LAY OUT PATTERNS ON 1" SQUARES — "OO" GAUGE ON 5/8" SQUARES — "HO" GAUGE 1/2" SQUARES.

FIG. 2



MAKE BRIDGE 5" WIDE FOR DOUBLE-TRACK "O" GAUGE. HEIGHT AND NUMBER OF ARCHES IS OPTIONAL DEPENDING UPON SPACE ONE HAS. APPROACHES TO BRIDGE SHOULD NOT EXCEED 4% (4" IN 100" TRAVEL)

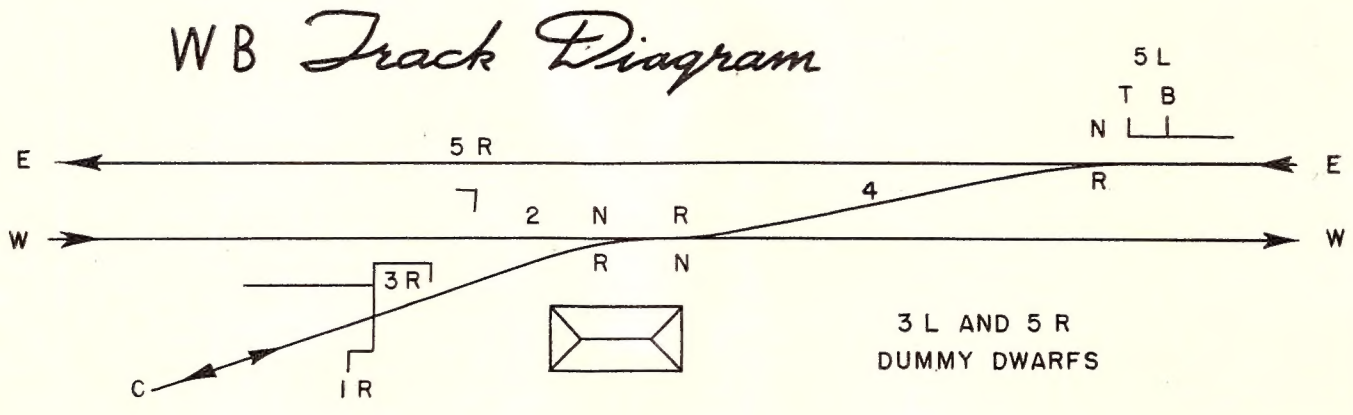


SIMPLIFIED INTERLOCKING

THIS MIGHT PROPERLY BE CALLED A SIMULATED INTERLOCKING SINCE THERE IS VERY LITTLE TRUE INTERLOCKING INCORPORATED IN IT. HOWEVER, THE SWITCHES, SIGNALS AND TOWER, WHICH CONSTITUTE ALL THAT IS VISIBLE IN THE PROTOTYPE, ARE PROPERLY ARRANGED TO MAKE A GOOD APPEARANCE.

By WARREN B. CRATER

W.B. at the west end of High Bridge in my layout will be described, it being complete at this writing. E.B. will be similar in all respects and L.B. at Lebanon will follow the same principle but will use three position upper quadrant semaphores. Description of my layout appeared in the November issue of MODEL CRAFTSMAN.



Track circuits are not used, thus eliminating a big headache for the fellow who wants realistic appearing signals but is not interested particularly in signalling. The machine represents a Union Switch & Signal Co. machine of about forty years ago and the signals are of the same period.

There must be a lever for each crossover or single switch, both switches of a crossover are operated by a single lever, also a derail on a track having a single switch may be controlled by the switch lever.

There must also be a signal lever for each track included in the interlocking. Left to clear the signal for train movement toward the left and right for movements toward the right.

Since this article deals with my W.B. plant only, let us study the Track Diagram. E is the eastward main track, W the westward and C is a connecting track to the branch and the yard. Since normal operation only is intended, 5R and 3L are non-operating dwarfs. 1R will clear when switch No. 2 is reversed. 3R will clear when switch No. 2 is normal. 5LT (top arm) will clear when crossover No. 4 is normal and 5LB (bottom arm) will clear when crossover No. 4 is reversed.

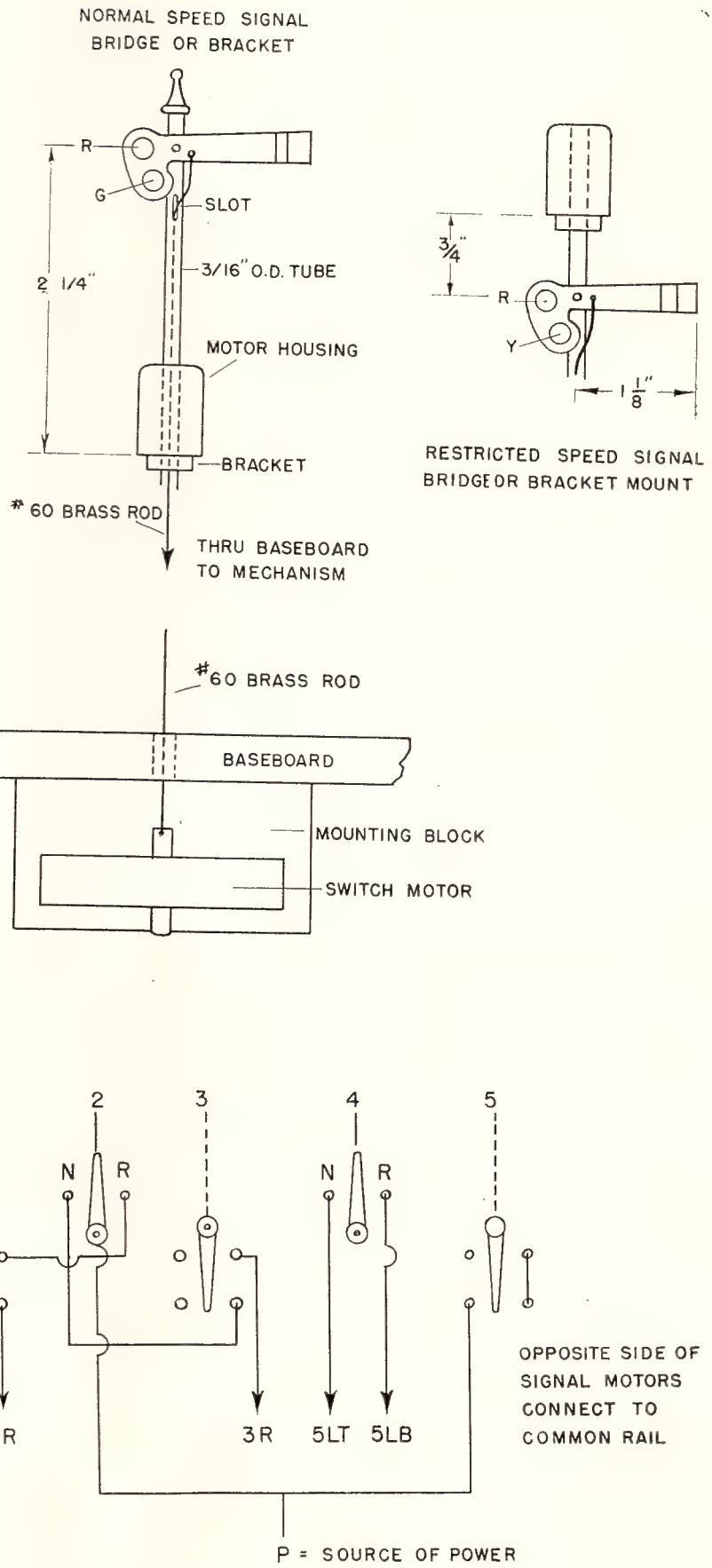
It should be noted here that a bottom arm could be added to 3R to indicate a crossover move to the eastward track and the dwarfs 5R and 3L could be made to work without adding any levers. Also larger plants with more tracks and switches may be used adding the necessary levers to the machine.

The switches are operated manually by rod connections to the switch levers on the machine.

The machine frame is built up of pine, as shown in the diagram, and arranged so the stretchers screw to underside of track base board and the front covers the edge of base board. The depth (length of stretchers) should be sufficient to permit the needed number of contacts.

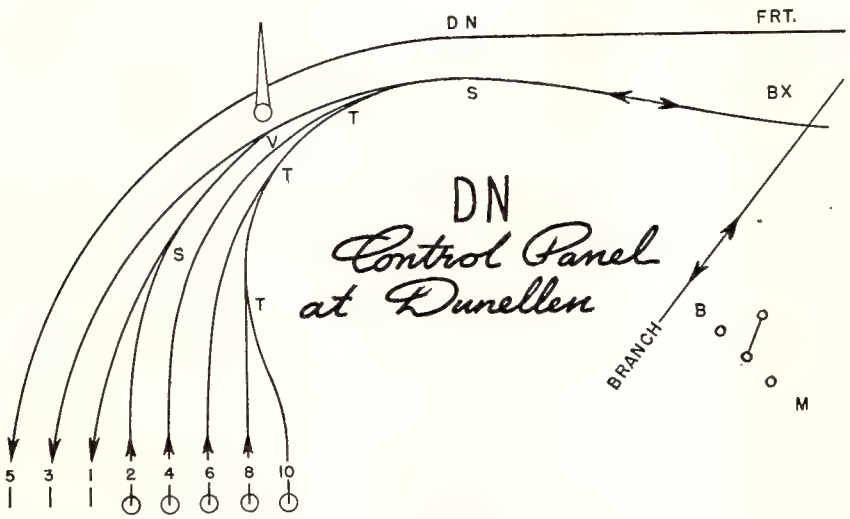
Usually a hobbyist has many varieties of junk, some of which may suggest its use here. My switch levers are from an old player piano, with pieces of 3/16" thick fibre for the necessary insulation to fix the contactors to their rods. However, 1" wood dowels have been used with brass contactors screwed to them. The sketch shows the contactors away from the contact fingers, to avoid confusion. These and the cranks at back of frame are set to properly aline the corresponding switch and to make contact when the switch is in position.

The signal levers are on short shafts of brass which only extend through front board. At the back ends of their shafts are similar levers which when moved R. or L. will press the bronze spring strips to make contacts to operate the corresponding signals to clear. These spring switches may easily be built, as sketch, on a block of fibre which in turn is screwed to the back of the front panel, located so as to make proper contact when signal lever is moved. Note only three of these were needed. Two more would be necessary if the dwarfs were to operate.



W. B. Interlocking Diagram

of wiring incorporated into Warren Crater's "O" Gauge layout



Since the movement for signal arms carried by rods from under the base board bridges is not practical, a cantilever bracket, prototype, of course, was scaled to suit. A ground mast is also used. Sketch of the cantilever is given. The base is between the westward and connecting tracks.

In the period being modeled here, the practice was to only use the signal arms which were needed to give the desired indications. Consequently 3R has only the top arm for normal speed on main track. 1R has only a bottom arm for slow diverging move and 5L has both top and bottom arms to indicate either kind of a movement.

The switch machine operated by two solenoids and well known to model railroaders is used to actuate the signals. Obviously one is needed for each operating signal arm.

Now refer to the wiring diagram. P source of power is the same connection on your transformer that leads through the control board to the 3rd rail. 1R, 3R, 5LT and 5LB refer to the solenoid that clears the signal arm of the same code number. The solenoids which restore the signals to stop position are connected to short ramp sections, about 6" long of 3rd rail placed opposite the regular power rail so that as the engine passes the clear signal its power collector shoe will make contact and affect the signal as in the prototype with track circuits, relays, etc. The opposite connections of all solenoids are connected to the running rail.

Where the two arms are on a ground mast the heights are, bottom arm 5¾" and top arm 8¾".

This electrical hook up is readily adaptable to two rail operation, since there is no simple signal circuit possible with two rail power distribution.

Obviously other types of signals may be used with this arrangement. However, it should be noted that with three position semaphores and color light signals in standard practice, there are three arms on main tracks for the current of traffic, one on the main tracks for reverse moves and one on yard tracks or sidings for all moves.

The set up at Dunellen is of a different nature, it being the east end of single track. At this point connection is made with the storage yard, the nature of which dictates the provision made for its operation. D.N. has nothing to do with the long freight train. Track FRT-5 which is not visible at this point, is not shown on the control panel, but is shown in the accompanying sketch only to give its relative location.

Since all switches at DN trail west and only tracks 1 and 3 are used for eastward movement, only one switch need be controlled manually. Consequently only one switch lever is provided. The two switches marked S divide eastward and westward movements. Therefore these are spring switches. A very light spring restores each of these to position for eastward movements to tracks 1 and 3. The others marked T are simply free point trailing switches.

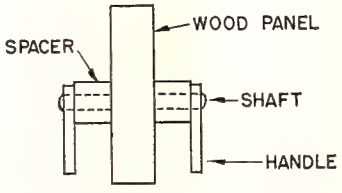
Westward trains trail through all switches. The controlled switch must be set. The spring switches will return to position for eastward movement and the T switches remain until another train moves them.

HJ Hampton at the other end of the storage yard is generally similar.

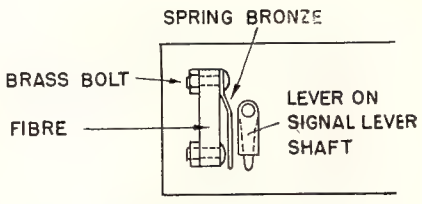
Westward trains entering the yard at HJ stop clear of the switches at DN on a short section of 3rd rail which is connected to corresponding push buttons on the DN board. These push buttons are pressed to start a train out of the yard The third rail in tracks 1 and 3 is connected with that in main track between DN and BX and trains on these tracks as well as the freight on track 5 will run to clear the switches at HJ.

The single pole double throw switch at BX, Bells Crossing, is a safety control for the grade crossing at that point Used in conjunction with the ball signal. when closed to contact M it energizes 3rd rail on main line and to B on the branch. Connected sections of 3rd rail permit stopping clear of the crossing.

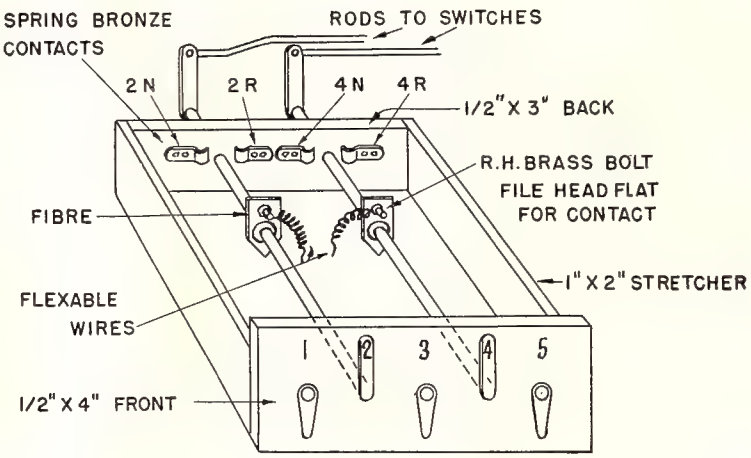
Although the particular type has not been decided, a signal will be provided to govern eastward movements. It will be interlocked with the controlled switch



SECTION THRU SIGNAL LEVER



BACK OF FRONT PANEL



Interlocking Machine

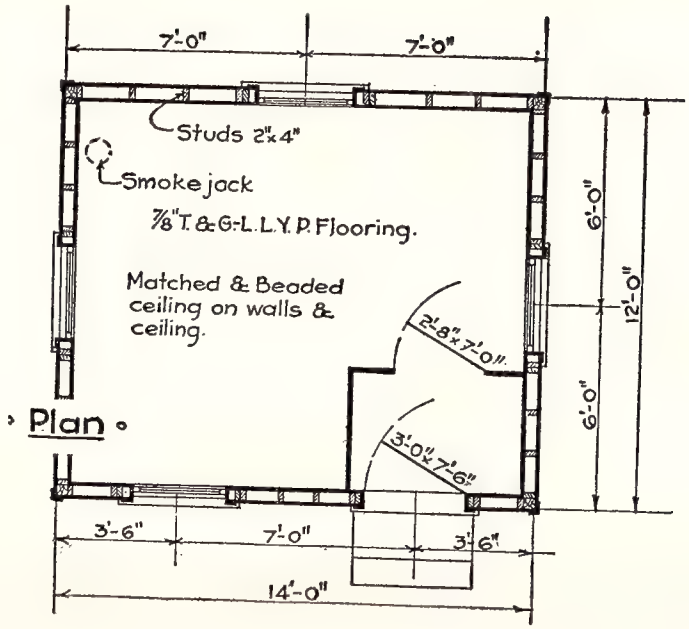
One Nite Project

THE office building described here will make a realistic addition to any layout. The protoype of these plans is standard equipment of the B. & O.

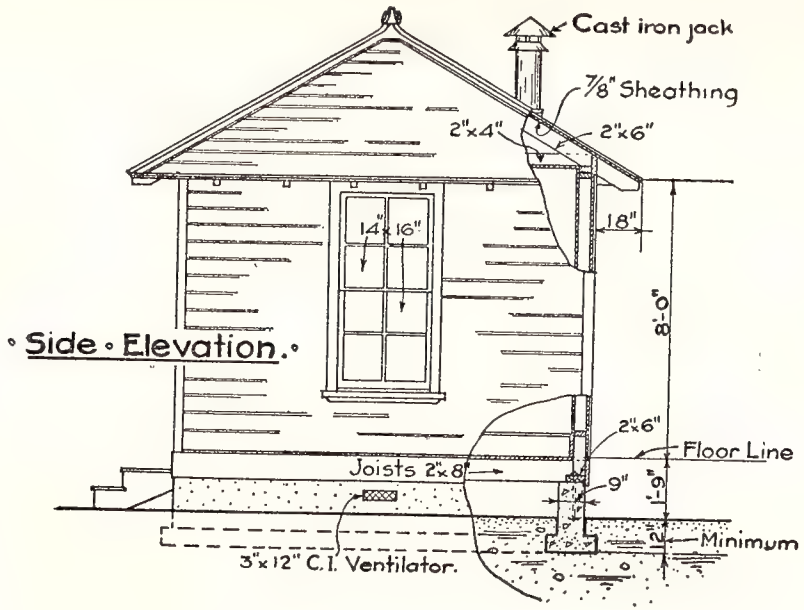
Construction of this office building is a simple process. The sides are made first, cut to size out of good stiff bristol board. The bottom portion of the sides are covered with brick building paper, the top portion either covered with building paper or scribed and painted a dull green. Cut the windows out as shown and use window building paper or celluloid (scribed lines on the celluloid filled in with black ink) to simulate the glass, cemented from the inside of the structure. The window frames can also be built up from bristol board. The door can be outlined with ink, or for added realism, built up from bristol board and left slightly ajar.

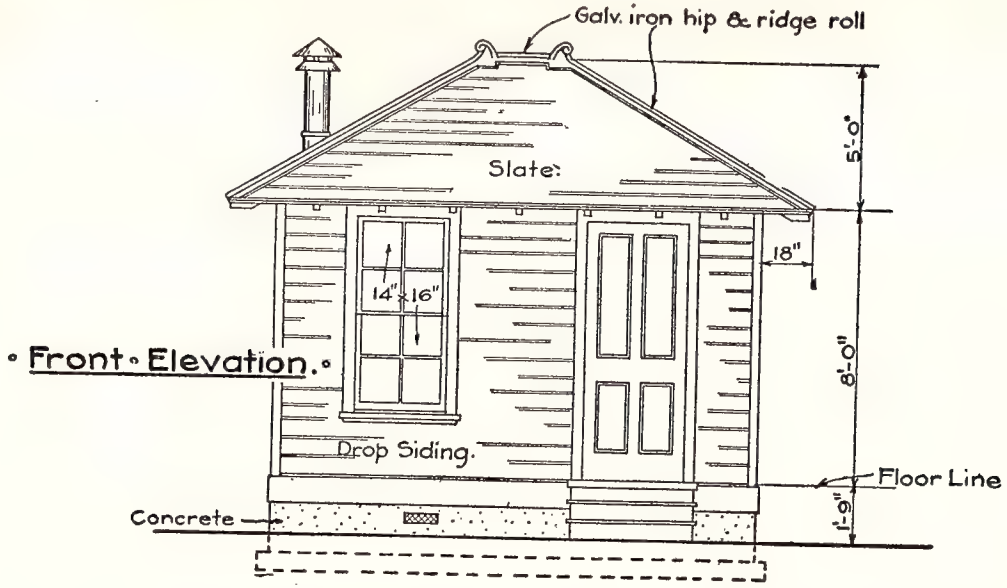
The sides are then cemented together at the corners or, if you prefer a more sturdy structure, ¼" square wood can be used as uprights for support. The doorstep can be cut out from a piece of white pine and painted black.

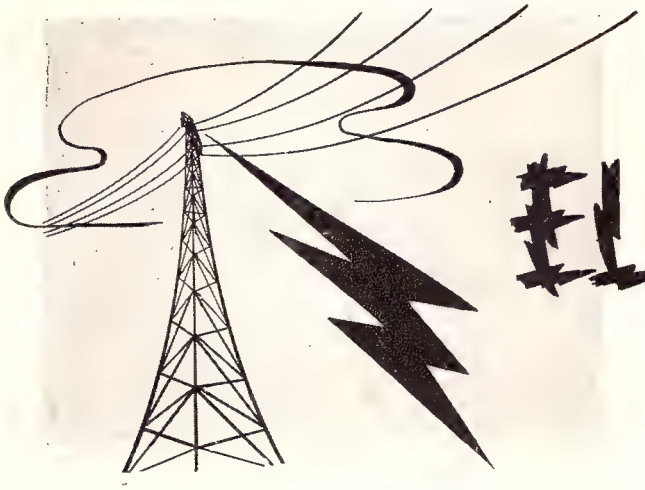
The roof is built up from bristol board and covered with building paper. Thin strips of balsa wood can be used to represent the eaves and strips of bristol board, painted black, to represent the galvanized iron hip. The stove pipe is cut from a ¼" dowel.



Plan







ELECTRICITY

SECTION I MAGNETISM

BY JOHN T. HALL

THIS is the first of a series of several articles on the electrical aspects of model railroading. It is the author's plan to tell you the methods whereby you can design and make your equipment such as switch motors, rectifiers, transformers, and relays. Before we can get into these interesting and useful methods, however, some knowledge of the fundamentals of electricity is necessary.

One of the first things to consider is the phenomena of magnetism. Any material which has the ability to attract iron and steel and which, when suspended freely will turn to point in a definite direction is said to be a magnet. This particular property of certain materials has been known for centuries. The name magnet is supposed to come from a district in Asia Minor named Magnesia where a mineral was to be found that is a natural magnet. This mineral is often called lodestone or magnetite.

A simple way to make a magnet out of a piece of steel is to rub it with a piece of lodestone or another magnet. The magnet obtained in this manner is rather weak. A much stronger magnet can be made by winding a coil of wire about the steel you wish to magnetize and passing an electric current through the wire. This piece of steel will retain it's magnetic property after the current in the wire is shut off. The magnet obtained in this manner is called a permanent magnet.

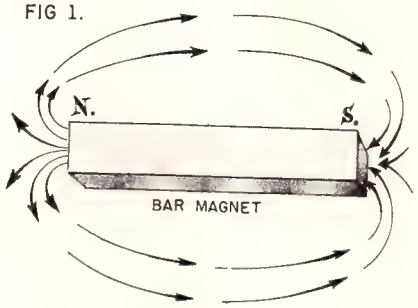
If a piece of soft iron is used in place of the steel, the metal will be a magnet only so long as the current is flowing in the wire. When the current is shut off, the metal loses its magnetic property. This piece of apparatus is called an electromagnet. The operation of all solenoids and relays depend upon this principle.

It has been found by experiment that magnetism is distributed uniformly over the surface of a magnet. This can be shown by taking a bar magnet (a short length of steel that has been magnetized) and dipping it in iron filings. The filings will cluster around each end, but few if any filings will be found to cling to the middle portion of the magnet.

Regions where the magnetism is concentrated are called the poles. If a bar magnet or a magnetized needle is suspended it rotates until it lies along a north-south line. Furthermore, the same end always points to the north. From this fact the poles of a magnet have been named. The end which points towards the north is called the north (N) pole and the opposite end, the south (S) pole.

All around a magnet is a region where its influence can be noticed. This region is called the magnetic field. Its existence can be shown by bringing a compass needle near a magnet. The closer the needle to the magnet, the greater the effect of the magnetic field on the needle.

FIG 1.



The magnetic field is said to be made up of invisible lines of force which flow outward from the north pole and connect with the south pole. These lines are farther and farther apart as the distance from the magnet is increased. The existence of these lines can be shown by a simple experiment.

First obtain some iron filings and a bar magnet. Lay a piece of paper over the bar magnet and sprinkle the iron filings fairly uniformly over the paper. Then tap the paper gently with your finger several times. The iron filings will arrange themselves in a pattern such as is shown in figure one.

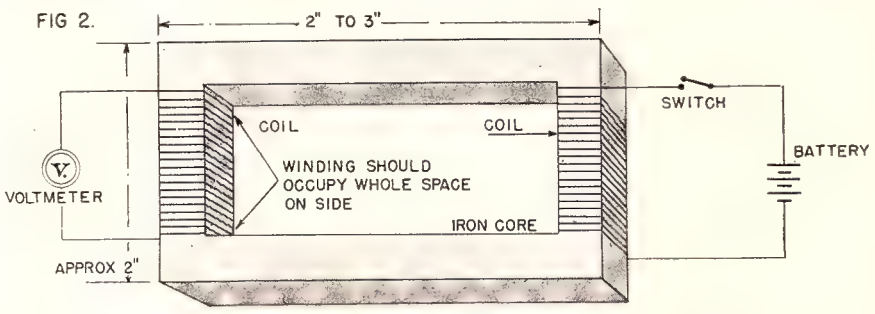
This magnetic field also exists around a wire carrying an electric current and around a coil of wire carrying a current. For example, if the field around the electromagnet mentioned earlier were plotted by the iron filings experiment just described it would be seen that the magnetic field exists around the electromagnet in much the same shape and pattern that it did around the bar magnet. Upon the existence of this field around a current carrying wire depends much of our electrical equipment such as transformers, motors and generators.

It has been pointed out that there is always a magnetic field around an electric current. It seems logical then, that sooner or later someone will inquire as to whether or not the process could be reversed. That is, produce an electric current in a conductor by placing it in a magnetic field. It can be done, providing that the number of magnetic lines of force is *changing*. This is done either by moving the conductor through the field or by changing the intensity of the field. Intensity of the field means the number of lines of force in existence which come in contact with the conductor.

When the number of lines in contact with the conductor is changed by either of the two methods mentioned above, a voltage is set up which develops a current in the conductor. The voltage set up in this manner is called an *induced* EMF (electro-motive force) and the whole process is called *induction*.

The following experiment is recommended to help understand this action. First take a piece of soft iron and bend

FIG 2.



EITHER 1/2" ROUND OR 1/2" SQ IRON ROD OR BAR IS GOOD FOR THIS EXPERIMENT

it into a closed shape, preferably a square (see figure 2). On one side of the square wind a coil. Doorbell wire will do for this purpose or any other wire that is insulated. Then connect one end of this coil to a switch and the other side of the switch to a battery. The remaining end of the coil should be connected to the remaining battery terminal.

On the side of the iron square opposite the first coil wind another coil similar to the first. It, too, must be insulated from the iron core. The two ends of the coil should be connected through a voltmeter, preferably the type with the zero position in the center of the scale.

When the switch is closed, the voltmeter in the circuit which has no physical connection to the source of current will register the presence of an EMF by deflecting in a definite direction. When the switch is opened, the voltmeter will deflect in the opposite direction from its first deflection.

The explanation of this action follows:

Remember we said that the number of lines of force must be changing in order to induce an EMF. When the switch is open, no current is flowing and no lines of force exist around the coil connected to the battery. At the instant the switch is closed, the current in the coil starts to build up from a zero value to the maximum value it will have in the circuit. This maximum value is determined by the circuit constant, that is, battery voltage and the resistance of the wire in the coil. As the current builds up from this zero value to the maximum value, the number of lines of force increases from none to a maximum. The number of lines of force finally arrived at depends upon the maximum value reached by the current. These lines of force are close enough to the coil on the other side of the square that they link the turns of the coil, so that their number increases, there is a relative motion or a change in the number of lines of force linking the coil.

The time required for this action to take place is measured in thousandths of a second so that the whole effect as seen on the voltmeter is practically instantaneous.

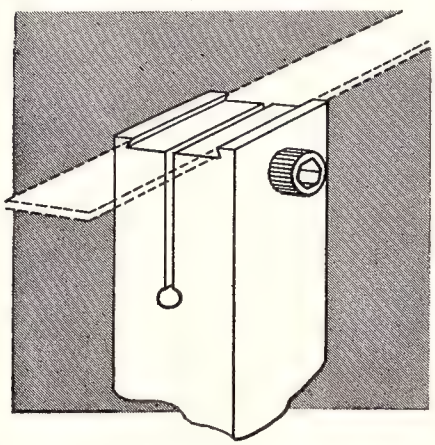
When the switch is opened, the number of lines of force linking the second coil from the first changes from a maximum to zero, causing a deflection of the voltmeter in the opposite direction.

These lines linking the two coils in the manner just described are called *lines of induction*. The number of lines of induction passing perpendicularly through a unit area (in the United States, a square inch) is represented by the symbol B and is called the flux density. If these lines of induction are uniform over an area A made up of a number of units of area (square inches) then the total flux extending through the area can be found by multiplying the number of lines per inch (flux density) times the number of square inches. The formula or mathematical way of saying this is $\Phi = B \times A$ where Φ (phi) is the symbol for total flux.

The intensity of a magnetic field about a coil or a wire which has no magnetic material for a portion of the circuit is represented by the symbol H. (If a steel core is placed in a coil the intensity of the magnetic field is greatly increased and is represented by the symbol B previously mentioned.) The ratio between B and H is called the permeability of the material and is represented by the symbol μ (mu). In other words, the permeability is found by dividing H into B. Permeability is a property of various materials which must be taken into consideration in the design of electrical equipment. Mathematically we say that $\mu = \frac{B}{H}$. The material given in these last two paragraphs is important and will be gone over again later.

SCALE HOLDER

A SIMPLE holder for a small machinist's scale can be made from a short length of square cold rolled steel bar stock if machined according to the sketch below.



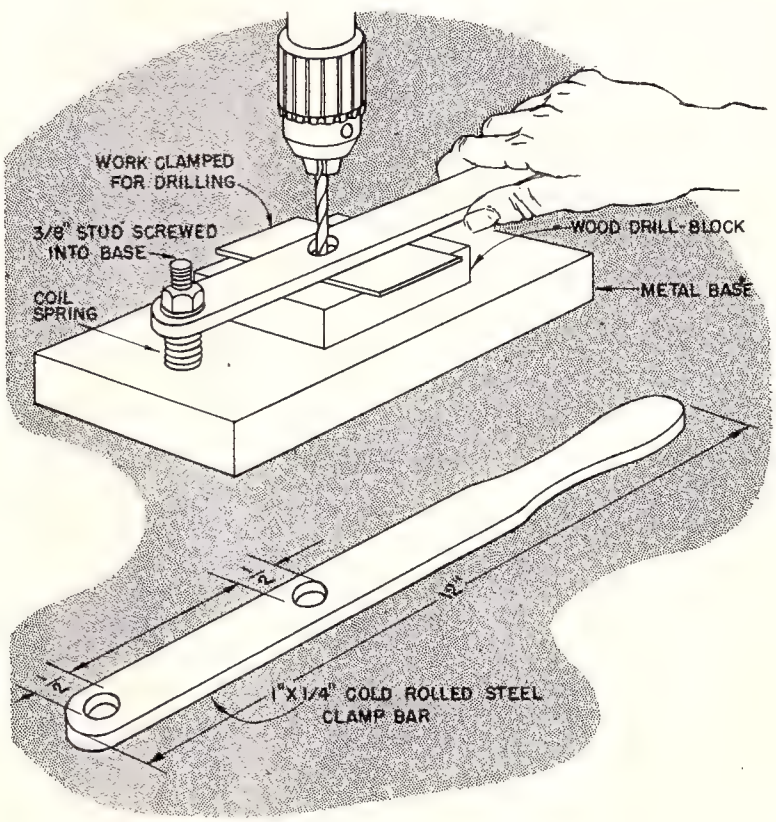
A hole is drilled and tapped near the upper end for a clamp screw which holds the scale firmly in place. A scale mounted in this way will be found convenient for taking measurements from the side of the work, for scribing lines parallel with the sides of the work and also measuring the depth of holes.

CLAMP FOR DRILLING SHEET METAL

IN drilling tin or other thin sheet metal, the quick acting hand clamp as shown in the sketch will hold the work securely and will eliminate any tendency to spin around when the drill breaks through. The clamps avoid the dangerous practice of holding the work by hand.

The added weight of a metal base will work out best although a wood base can be used. In either case, a ⅜" stud is screwed into the one end to hold the clamp bar in place. The dimensions given in the drawings are for a clamp bar to hold small work.

In using the clamp, a wood drill block should be placed under the work which can be replaced by a new one when needed. The coil spring under the clamp bar will aid in keeping the bar off the work while it is being centered under the drill.



Memoirs of a Former Model Railroader

By WILLIAM SCHOPP

MY INTEREST in model railroading dates back to the time I was just a few years old, the Christmas of 1916. Among my many presents was a Bing 0-4-0 locomotive, some cars and an oval of wind-up track. In subsequent years this was increased by another 0-4-0 of English outline, with English cars; a reversible 4-4-0 Bing of American outline, with stop and reverse buttons in the cab; much more track, switches, stations, tunnels, etc. There was a station that stopped the train, rang a bell and started it again. There was a two masted signal gantry with real miniature oil lamps that could be lighted to shine through the spectacles of the semaphores.

Later, about 1920, my Christmas railroad became partly electrified with the addition of an Ives #3250 NYC type without a headlight, powered by dry cells. A year later, a larger Ives loco, I think it was #3252, with two long passenger cars, was added along with more track and the wind-ups were consigned elsewhere. A year or so later an Ives #1118 steam type with three more coaches joined the Christmas line. Unfortunately this engine was a lemon that never would run. The line grew and grew with more stations, track and accessories. There was a Dorfan electric type, an American Flyer, two Lionel electrics, and finally a Lionel steam type. Aside from the five Ives coaches mentioned before, there was a Lionel observation, an American Flyer mail car, and about eight freight cars, the best of which were by Dorfan and Ives.

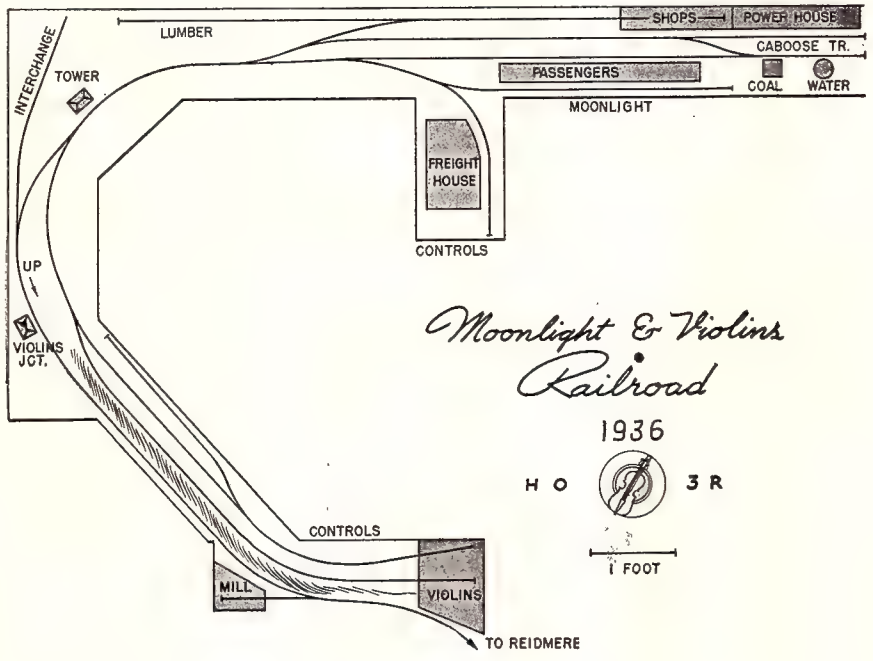
With the help of my brother, this railroad prospered all the year 'round in various layouts up to about 1935 when it was sold off bit by bit. About that time my name got on several model railroad mailing lists through answering ads in the old Modelmaker which I read in the Free Library of Philadelphia. I was soon reading THE MODEL CRAFTSMAN and many other model publications.

While attending college I would dream away many an unhappy hour in History of Education class drawing model railroad layouts, while my notebook edge doodles in other classes consisted of switches, crossovers, crossings, slip-switches, scissors, ladders, and other fascinating variations of trackage. For that matter my doodles even now are similar, except that they usually are a variation of the trolley Grand Union theme with extra intersecting tracks thrown in to make it tough. Wonder what a psychologist would make of some of them if he didn't know I was off my trolley over trolleys? "The diverging lines indicate a split personality, while the complexity of the diverging, merging, and intersecting lines indicate a tremendous inner conflict."

Meanwhile I had met George Stock, seen his railroad in much fuller operation than it ever seems to get nowadays, and bought one HOwen reefer kit which I subsequently assembled. That was the first and only car kit I ever bought until I began model trolleying when eventually several Moore interurbans ran over my various pikes. I next assembled an open end coach in HO gauge (but 1/8" scale), following directions given by Eric LaNal in a magazine article. The principal ingredients were bristol board and balsa wood, with the sides laboriously cemented up with each window post consisting of two pieces. Another coach, a mail car, a box car, a flat, a gon, a hopper, and a caboose followed. These were very crude cars judging by my later efforts My standards of HO cars were considerably raised by seeing those built by Walter Schmidt, of Allentown, Pa., for Joe Manning, of the Model Railroad Exchange, Collingswood, N. J. My subsequent cars were much better looking, aided by better lettering, more attention to detail such as grab-irons and, most of all, by the monumental discovery (at least I am claiming credit for it) that very decent looking freight car side bracing can be made by cutting the head from HO gauge rail. The web must be filed or hammered smooth to avoid cut fingers and the pieces straightened. (The head, when straightened can be used for roof bracing.)

My first model pike, the Moonlight and Violins Railroad, was an HO three rail line laid around three sides of a dormer window in my attic bedroom. The big terminal, Moonlight, was a one by ten foot plank, supported on flanged pipe posts above a large flat-top desk (later replaced by a smaller work-table). The flag-stop of Violins Jct. was under the window, while Violins (Upper and Lower —see plan) was on the shelf of a large open bookcase. As you can see, the whole railroad could be operated from one comfortable swivel chair, which indeed it was.

A word regarding the name of the pike to those people who are always curious about "where did you get the name of your railroad?" (unless it is Pennsylvania with Belpaire fireboxes to make it even clearer). Several months before construction really got under way I had drawn up carefully a gigantic three-room model railroad, to fill the whole attic. One section was named Moonlight and Violins from a song of the same name from Earl Carroll's Sketchbook. Another section was named Moonlight, Magnolias, and You from a song of the same name by yours truly. For about four years before taking up the model hobby in earnest, I was a completely unsung songwriter, tossing off many dillies which the song publishers wouldn't even open. The most interesting from a railroad point of view was one about riding the open trolleys through Fairmount Park, rhymes with spark, rhymes with arc—conductor walking down the side in his daredevil way and telling me to keep my foot off the trolley rope, etc. At the present time I am contemplating a Chrapsody for Five Air Horns and a Trolley Harp, with directions as to soft and loud (usually given as p, mp, f, ff,



etc.) given as first series position, full series, etc., up to Field Taps when temporary deafness sets in. So the M. & V. was almost called Moonlight, Magnolias, and You.

Rail, ties, spikes, fishplates, third rail, and third rail chairs were bought from the Model Railroad Exchange before there was any motive power. This establishment of Joe Manning's was located very close to a Food Fair which my parents patronized weekly. I would hang around and bother Joe while they were shopping. It is terrible the amount of hanging around, trivial questioning and wondering a model dealer has to put up with to sell a few dollars' worth of material.

For motive power I ordered a Stewart-Reidpath "Reidmere" mechanism with six 20 mm. drivers, and presently it arrived from England. Power was supplied by an old auto service battery bought for a dollar (this was 1936). At a school where I had been practice teaching I had a wooden boiler of the right outlines turned up, and at college I had a "wood butcher" drill a square hole in the firebox to clear the top of the mechanism. With that and some sheet aluminum, and a set of cylinders cast with soft metal in a Lux soap mold (idea from LaNal) I made my first engine, a 2-6-0 with a vague resemblance to an SP mogul. Since I didn't know how to spring the pilot truck it caused much grief, so I made a new tin cab and tender and so came up with a very useful engine, a 4-6-4T with a cowcatcher at each end because there were no turning facilities.

Meanwhile, I made several stations, tanks, etc., using Merco building paper obtained from George Stock and a Mr. Jacques in Winnipeg. Switches were operated by the Stock system of that day: piano wiring connecting small angle cranks. The action was started by a home made lever frame, while each switch was pulled back to position by a small spring opposite the pull of the piano wire.

The railroad was started as soon as college graduation was over, with the intention that I would work on it over the summer and obtain a teaching job in the fall. However, teaching jobs were much harder to get then than now and I was unemployed, except for occasional substituting, for a year. This gave me plenty of time to work on my model railroad, but very little money to spend on it.

So by early in 1937 the M. & V. R. R. was finished. More cars and buildings had been added. The 4-6-4T, whose pilot trucks were better than two wheel ones, still had derailment trouble, so I resolved to build a loco without pilot or trailing truck and with a minimum of overhang so as to minimize coupler troubles. This took the form of something that vaguely resembled an NYC electric, but which I called a Diesel in spite of large drivers. It was a successful engine, especially after the one third rail shoe had been augmented by a second one.

All my cars had Mantua automatic couplers which operated by permanently placed and almost invisible celluloid ramps. All had old Mantua "jiffy" trucks which had stamped side frames. These were thin enough not to hit the third rail, were cheap and rolled very well.

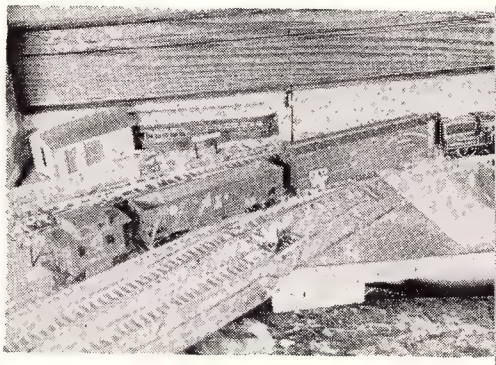
Operation on the Moonlight and Violins R. R. consisted almost wholly of making up and breaking up trains, a feature which quick reversing and automatic uncouplers, as used in HO, make easy. A freight of, say, an engine and four cars plus a caboose would start out from Moonlight and make the short run to Violins, where a car would be dropped at the freight house and the hack pushed onto the storage track. The loco would then maneuver between two cars run back to Violins Jct., and then climb to Upper Violins, where one car would be pushed into the Orangeola factory and another to the upper freight station. Perhaps one or so would be dropped into the Jct. interchange track. A car or so would be picked up at Upper Violins and the interchange, taken back to Violins and the train made up again, which often was quite a trick with the trackage, ramps, and positions of the cars involved.

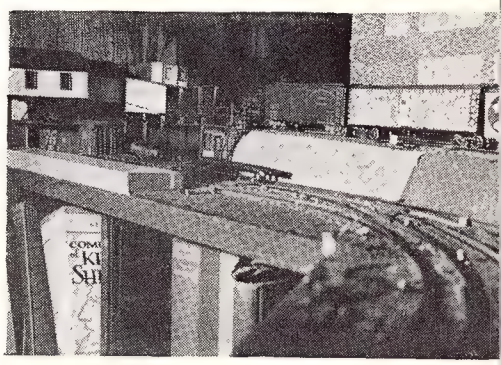
Then back to Moonlight again where cars would be distributed on the storage track, the freight house, the engine terminal, and the lumber yard which latter required a move around the train. Then make up another train and so on. Occasionally a one car passenger train or a mixed train would be moved over the line.

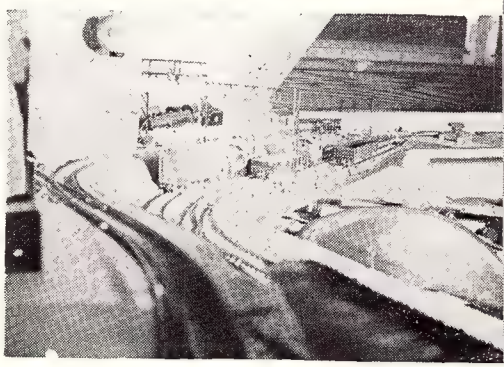
Finally my brother and I extended the track from Upper Violins, over a four foot gorge, up an eight per cent grade to a bureau top, where there was a shelter bearing the imaginative name of Plateau. Thence it crossed a window on a three foot huge through truss bridge to a double track shelf ending in a station at Reidmere.

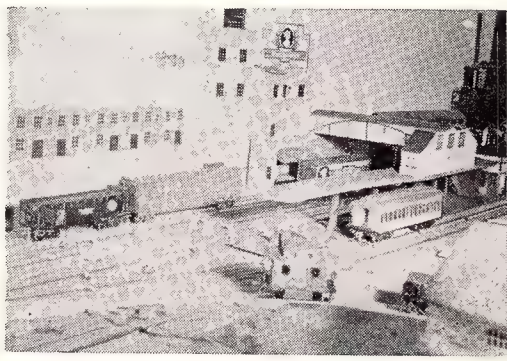
The downfall of the Moonlight & Violins R. R. was prosperity, because I finally got a job, teaching in Philadelphia, and with the huge money I was making decided to make a better line, a two rail one. Part of the trouble was also caused by changing the one mechanism over to a 2-6-0 camelback which was top heavy and seemed too much for the weakening Reidmere mechanism to carry.

Old timers will remember the Reidmere mechs. They had a cast white metal frame in which the motor was integral with the frame. The armature shaft was parallel with the axles and so power was transmitted with spur gears giving a nice coasting effect when power was shut off. The weakness, I believe, was in the brushes which were just flat pieces of phosphor bronze with the ends bent over to give a little thickness.









Photos on the right, from top to bottom: View of Moonlight station in the early days. Grade crossing scene on the Moonlight and Violins R. R. showing "diesel" #3; Complicated two level station at Violins on shelf of bookcase. At left is freight platform with elevator to freight house at upper level. At right is lower level passenger platform with steps to upper level freight and passenger station and tower; Looking down from Upper Violins station showing top of operational swivel chair; Moonlight station at a later date.

THE MODELMAKERS LATHE

How To Run It

WITH the lathe set up and ready to run as described in Part 1, and with a fair understanding of the various cutting tools needed, their care and how they should be ground described in Part 2, this third installment will outline the general methods of mounting work in the lathe so that actual turning operations can be started.

Whenever possible, work should be mounted between centers in the lathe and driven by a lathe dog. This will allow heavier cuts to be taken as the work is supported on both ends. This is the most practical way of machining straight bar stock and is the common practice of expert machinists. To mount work in the lathe in this manner, center holes must be accurately located and drilled in each end.

There are a number of ways to find the exact center of the work and to drill these holes. Several methods are shown in the drawings, figs. 1 to 4. Perhaps the quickest and easiest method to locate the center of round bar stock is to use the center head shown in fig. 1 By holding the tool firmly against the shaft and scribing two lines at right angles across the end, the center can be found instantly on shafts of any diameter within the capacity of the tool.

Fig. 2 shows a shaft on its side on a surface plate, the center being located with dividers. The end of the shaft is chalked and the dividers set at approximately half the diameter of the work. Using the same setting on the dividers, four lines are scribed on the face of the shaft. The small square made by these intersecting lines indicates the center.

The hermaphrodite caliper can be used, as in fig. 3, in much the same manner as the dividers. The work is chalked and four lines are scribed with the caliper set at a little more than half the diameter of the work. Again the small square made by the intersecting lines is the center.

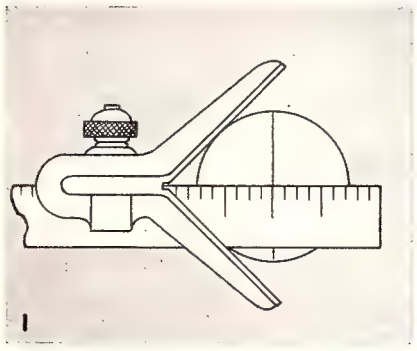
Irregular shaped work can be centered with a surface gage while held in a V-block as shown in fig. 4. A horizontal line is scribed across the end, the work given a quarter turn and another line scribed. The intersecting lines locating the center of the work.

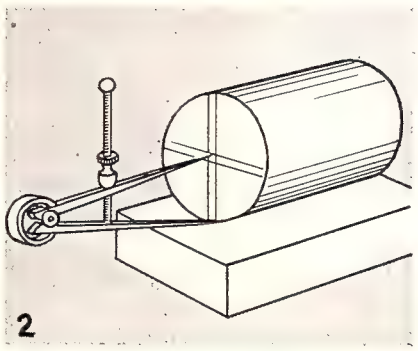
The bell center punch, fig. 7, when placed over the end of the work will automatically locate the center when the center punch is struck a blow with a hammer. This type of punch will center the work accurately only if the punch is held in line with the work and if the end of the work is accurately squared. When properly used, this tool is a time saver and is an interesting project which can be made up in the shop.

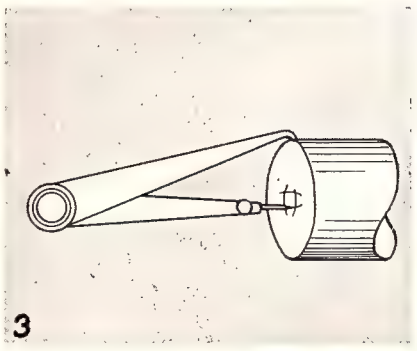
The drawing in fig. 8 shows how the point of the center punch can be thrown off center when used on work where the ends have not been accurately squared.

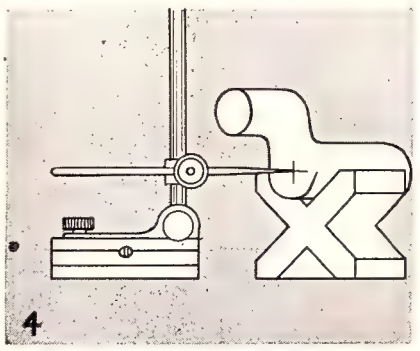
In center punching the work where the center has been found by scribing lines, (fig. 5) the punch is held vertically on the center point and tapped with a hammer. The punch mark should be deep enough so that the work can be placed between centers and tested by revolving (fig. 9) to make certain that the centers are located accurately. Spin the work by hand and mark the high spots on each end of the shaft with a piece of chalk. If the punch marks have not been accurately centered, their position can be changed by holding the center punch at an angle (fig. 6) and driving the punch mark over.

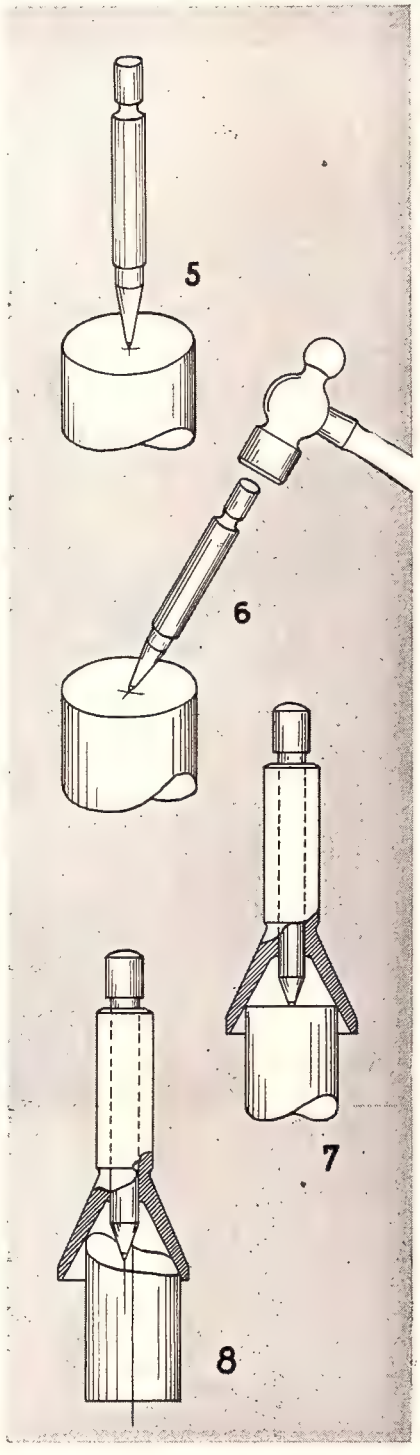
When the centers have been accurately located on each end of the shaft, center holes should be drilled and countersunk to fit the lathe center points. This is done best with a combination drill and countersink as shown in fig. 13. These center drills are made in various sizes. The chart in fig. 14 will aid in selecting the proper size for the work at hand. The center holes can also be drilled by a small twist drill followed by a 60-degree countersink as shown in figs. 11 and 12. The size of the drilled hole and the depth of the countersink can be determined to fit the work at hand by again referring to the chart (fig. 14). If the

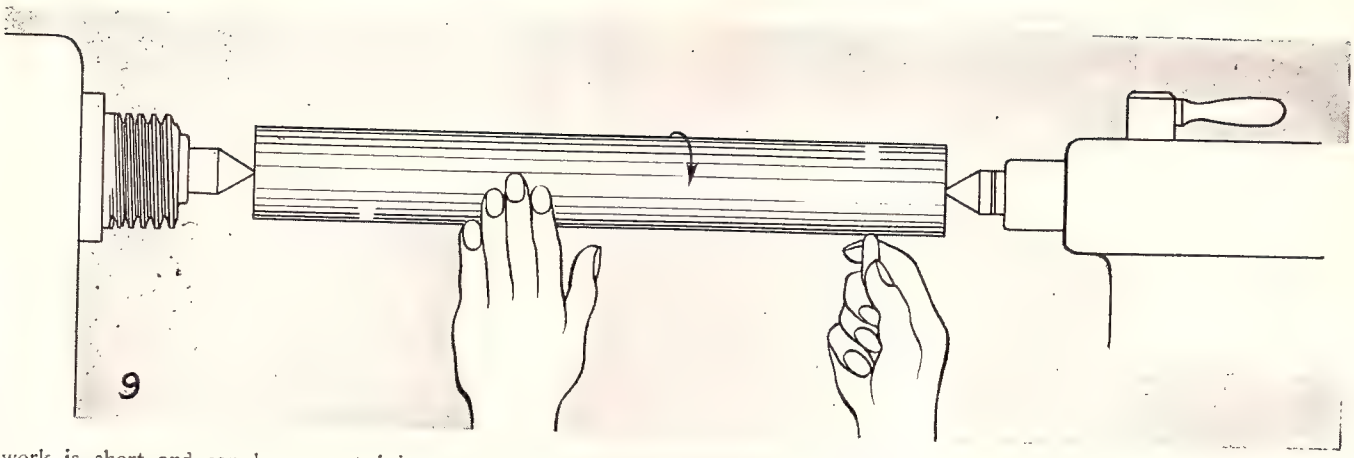












work is short and can be supported in the lathe chuck or if small enough in diameter to be passed through the headstock spindle, it can be quickly centered without marking or center punching and accurately drilled. This is done by mounting the combination center drill in the tailstock chuck and feeding it to the work with the tailstock hand wheel (fig. 10). When a special machine is not available, this method of center drilling is the most commonly used, as it is the most convenient.

Where the work is too large in diameter to be passed through the headstock spindle or too long to be drilled while held in the chuck alone, it can often be supported by the steady rest on one end and by the chuck on the other. The center drill is chucked and mounted in the tailstock spindle in the manner shown in fig. 10.

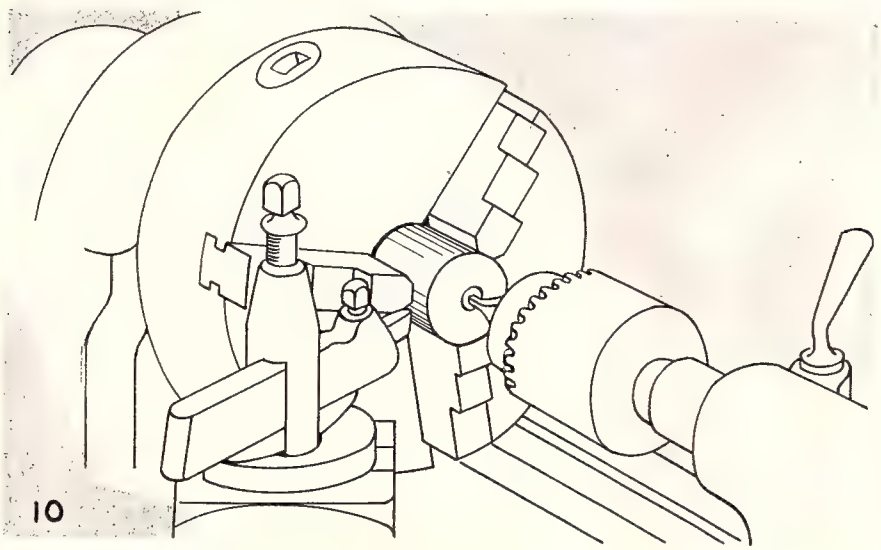
Center holes can also be drilled and countersunk in the drill press, but by doing the work in the lathe, greater accuracy can be obtained. In the long run, the lathe will be found to work out more satisfactorily.

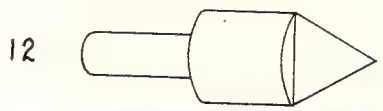
In mounting the work between centers in the lathe, a lathe dog must be fitted for driving it. On round shafts, the standard lathe dog (fig. 19) will work out best, but for square or rectangular stock, the clamp type lathe dog also shown in fig. 19 will be needed. The lathe dog should be selected to closely fit the size of the work and care should be taken to tighten the set screw securely.

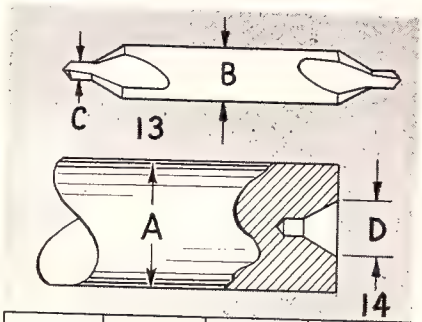
Fig. 20 shows the work mounted between centers with the lathe dog fitted properly and all set to run. The tail of the lathe dog fits into the slot of the face plate freely so the work rests firmly on both the headstock and tailstock centers. Fig. 21 illustrates a condition which must be avoided. Here the tail of the lathe dog is too short to clear the bottom of the slot in the face plate thus preventing the lathe center point from fitting properly into the countersunk hole in the work.

Before mounting the work between centers, they should be checked, as illustrated in fig. 24, for alignment. If the headstock lathe center is out of line, which can be caused by a chip or dirt in the spindle hole, the work will be turned as shown in fig. 22. The spindle hole and the lathe center should be cleaned thoroughly before the lathe center is inserted. If the tailstock center is not in line, the work will be turned tapered as in fig. 23. To correct this poor condition, the tailstock clamp bolt should be loosened and the tailstock top set over in the proper direction by adjusting the set over screws. This is a difficult job. If the lathe is a new one, it will be best not to move the tailstock over for taper turning as considerable work is involved in getting it back to its original accuracy.

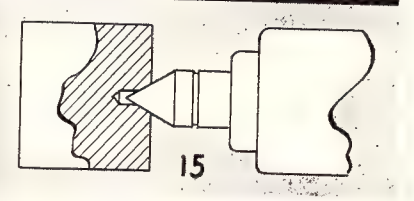
If the lathe needs re-aligning, however, this can be done by mounting a shaft between centers as in fig. 25 and taking a shallow cut about ½" wide and without changing the position of the cross feed, move the tailstock back on the

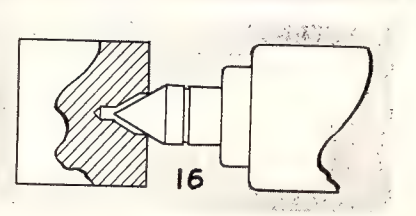


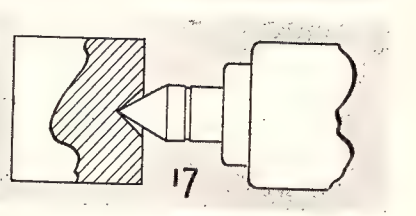


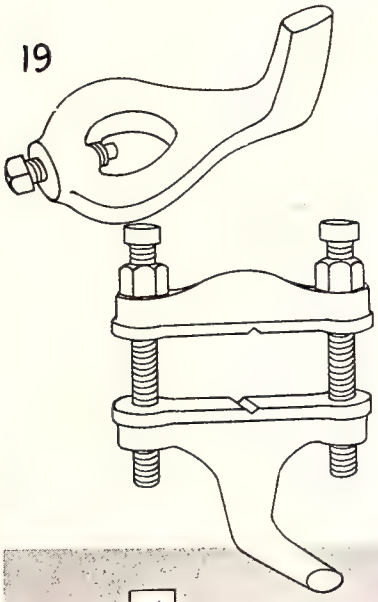


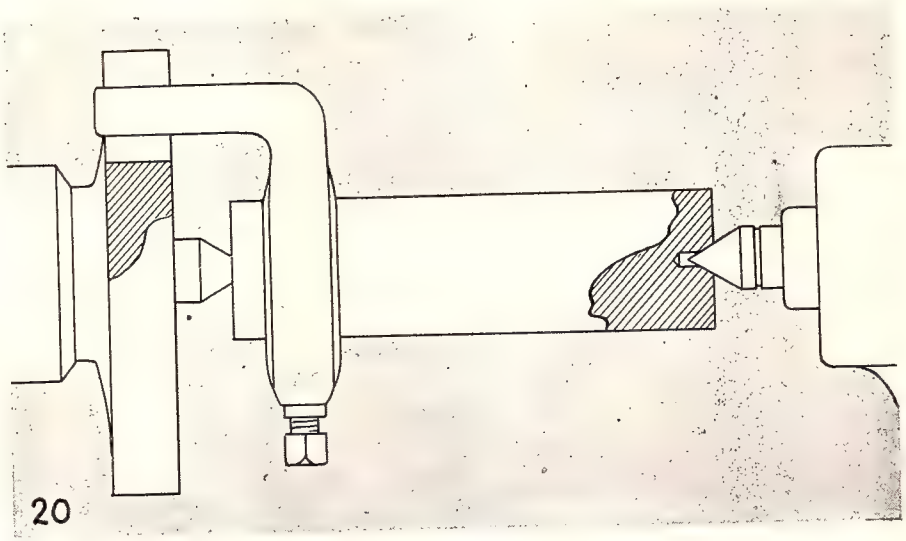
DIAMETER OF WORK A	DIAMETER OF DRILL B	DIAMETER OF DRILL C	DIAMETER OF HOLE AT D
3/16 TO 5/16"	13/64"	1/16"	1/8"
3/8 TO 1"	3/10"	3/32"	3/16"
1 1/4 TO 2"	7/16"	1/8"	1/4"
2 1/4 TO 4"	1/2"	5/32"	5/16"

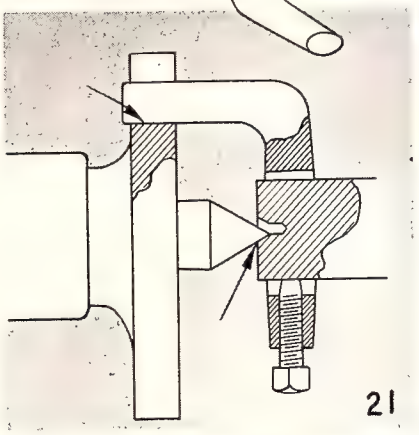


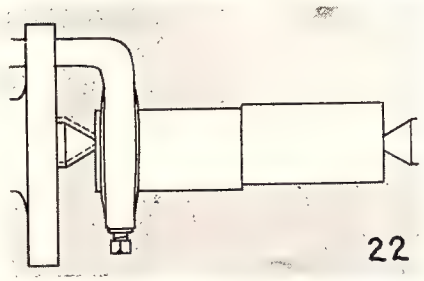


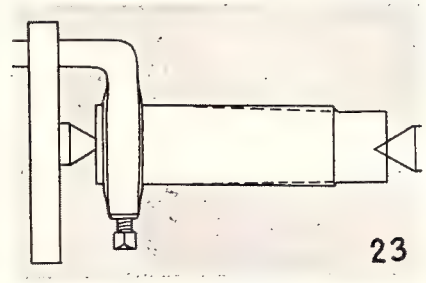


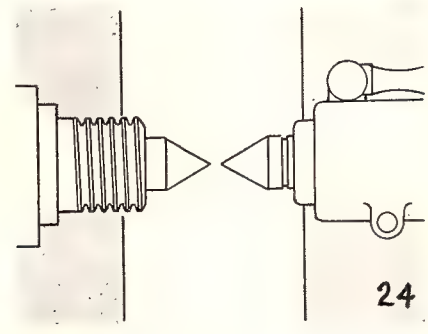












ways and swing the work clear of the tool bit. Then run the carriage to the right far enough to take the second cut and again place the work between centers. When the second cut has been made, measure both cuts with a micrometer, if they are alike, the lathe is turning straight. These two cuts have the same affect as if one cut the full length of the shaft had been made. If there is a difference in the diameter of the two cuts, the work will be tapered. If the diameter of the second cut is larger, the tailstock slide should be moved toward the cutting tool. If the second cut is larger, the tailstock slide should be moved toward the cutting tool, if the second cut is smaller, it should be moved away from the tool bit. This is done by releasing one of the adjusting screws on the tailstock top and tightening the opposite screw a similar distance.

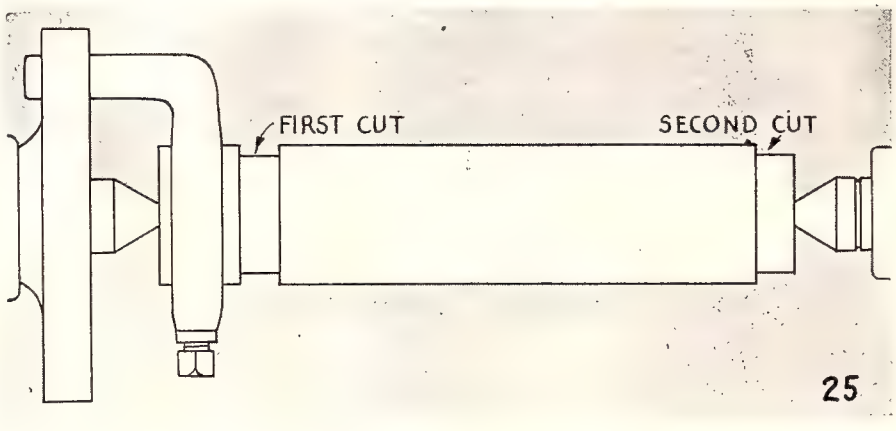
Another test cut is made on each end of the shaft and measured again. If there is any variation in the diameter of the two cuts, continue this operation until the desired degree of accuracy is obtained. Most lathes have a mark on the end of the tailstock where the top and bottom join to show the relative position of these two parts. For fine, accurate work, this mark should not be depended upon. The alignment test described above will be a more reliable method of getting the centers accurately in line.

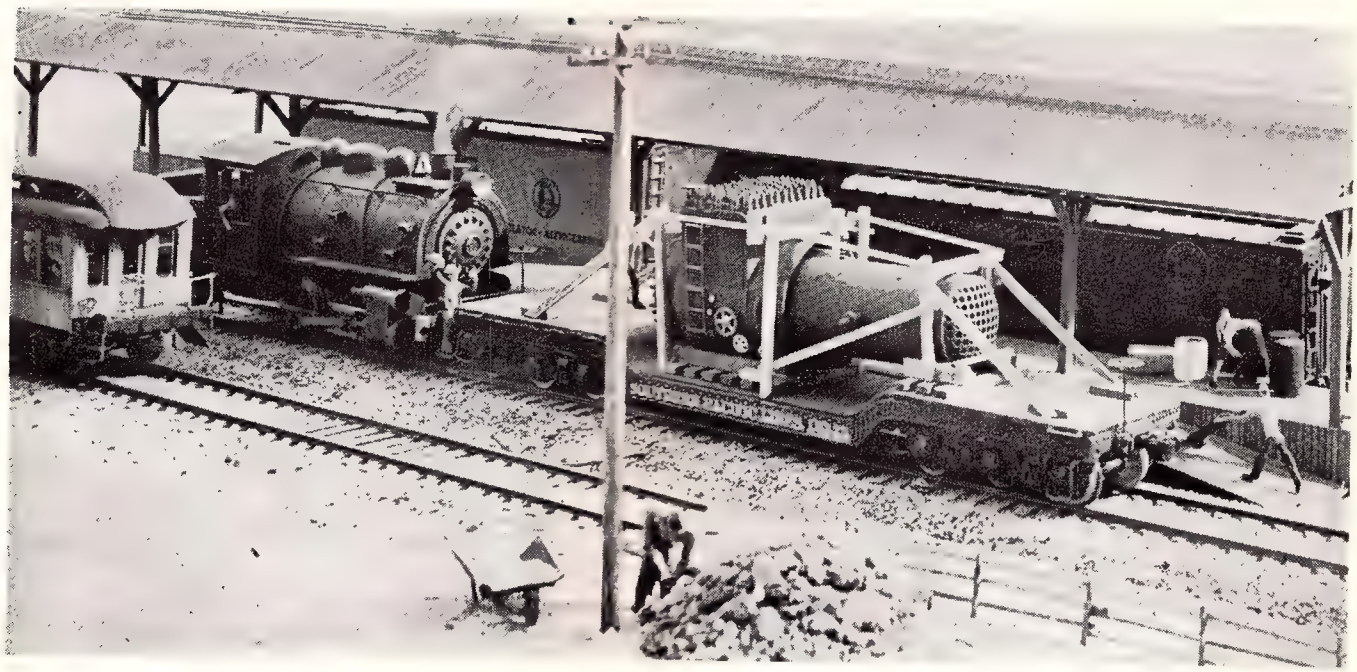
The alignment of the lathe centers should be checked at regular intervals, so as to maintain accuracy of long cuts.

In adjusting work between centers, oil the center hole for the tailstock center point, lock the tailstock to the ways and turn the tailstock hand wheel until the work can be moved back and forth freely but without looseness or play. As the work is machined in the lathe, it frequently becomes hot and expands enough to bind between the centers. When this occurs, the lathe should be stopped, the tailstock center backed off and the countersunk hole in the work well oiled. Replace the work between centers and readjust the tailstock center until the work is held firmly without slack but not too tight. Move the tail of the lathe dog back and forth between the edges of the slot in the faceplate. This will allow the work to revolve just enough on the lathe centers to feel how firmly the work is held. It should move back and forth freely but still have a very slight drag. If the work becomes hot from the friction of heavy cuts and expands slightly, the tailstock center should be backed off and readjusted, otherwise the hardened point of the lathe center may be ruined.

When making a roughing cut on work held between centers, see that the lathe dog is tight and the tailstock center well oiled. Set the tool bit well back in the tool holder and fasten the tool holder well back in the tool post so there will be little overhand on these two parts. Use a comparatively slow speed and start the cut at the tailstock end of the work. Turn the tool bit into the work about 1/32". This will make a fairly heavy cut without straining any part of the lathe.

(*Continued on page 47*)



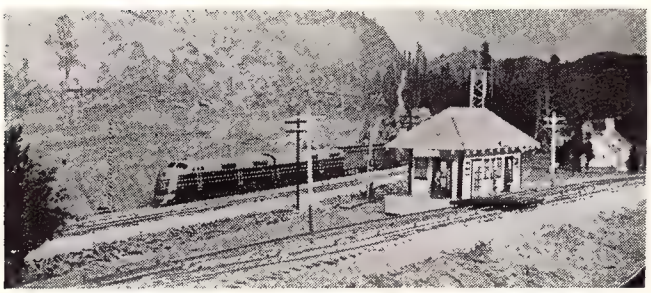


A SWITCHER on the HO gauge Gorre & Daphetid Railroad of John Allen, Monterey, Calif. cautiously pushes an interesting pay load on an S. P. Depressed center flat car. There's no telling what that load is, all we could find out from the brakeman was that the destination was Oakridge, Tenn. The smoke is cotton, all structures are built up from scratch.

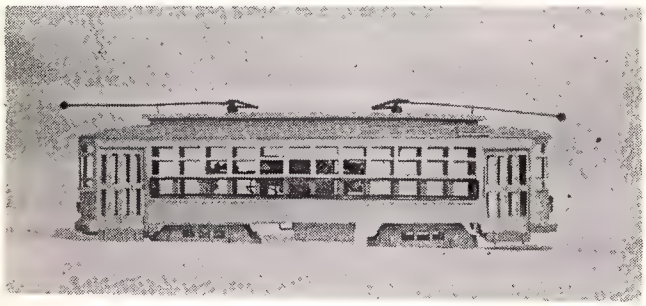
Your Nabor's Pike

WANT THREE BUCKS

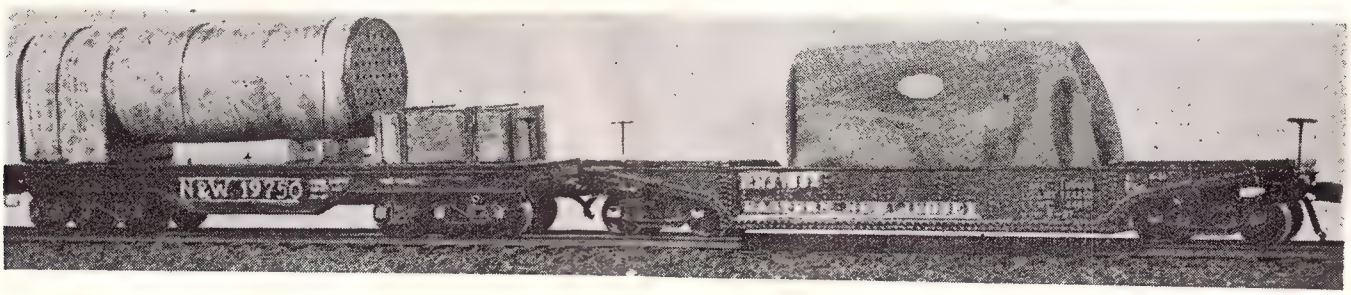
That's what we're paying for both photo and appropriate caption appearing on this page. Two bucks for each photo without caption. Here's a good chance to let your "nabor" see your work and make some easy money in the bargain. Photos are selected on a basis of good photography and reader interest. We do not limit you to some super-detailed model, so don't be bashful—your photo may be the next to appear on this page. Include all pertinent information regarding scale, gauge and all interesting facts. Send material to the Picture Editor, Model Craftsman, Ramsey, N. J.



BALTIMORE & OHIO DIESEL nearing X Junction on the Main Line of the Hempfield, West Virginia Terminal Railroad Club's O gauge layout. That perfectly detailed B & O diesel is the work of W. J. Gwinn.

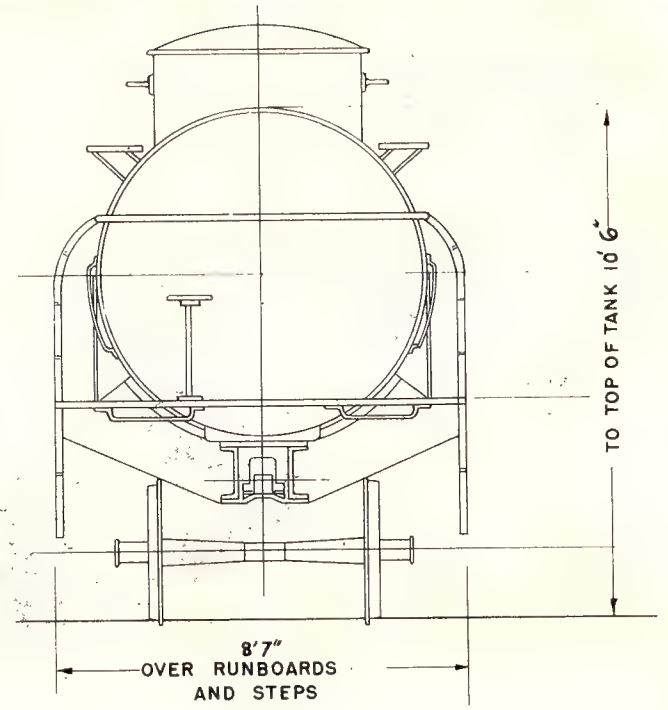


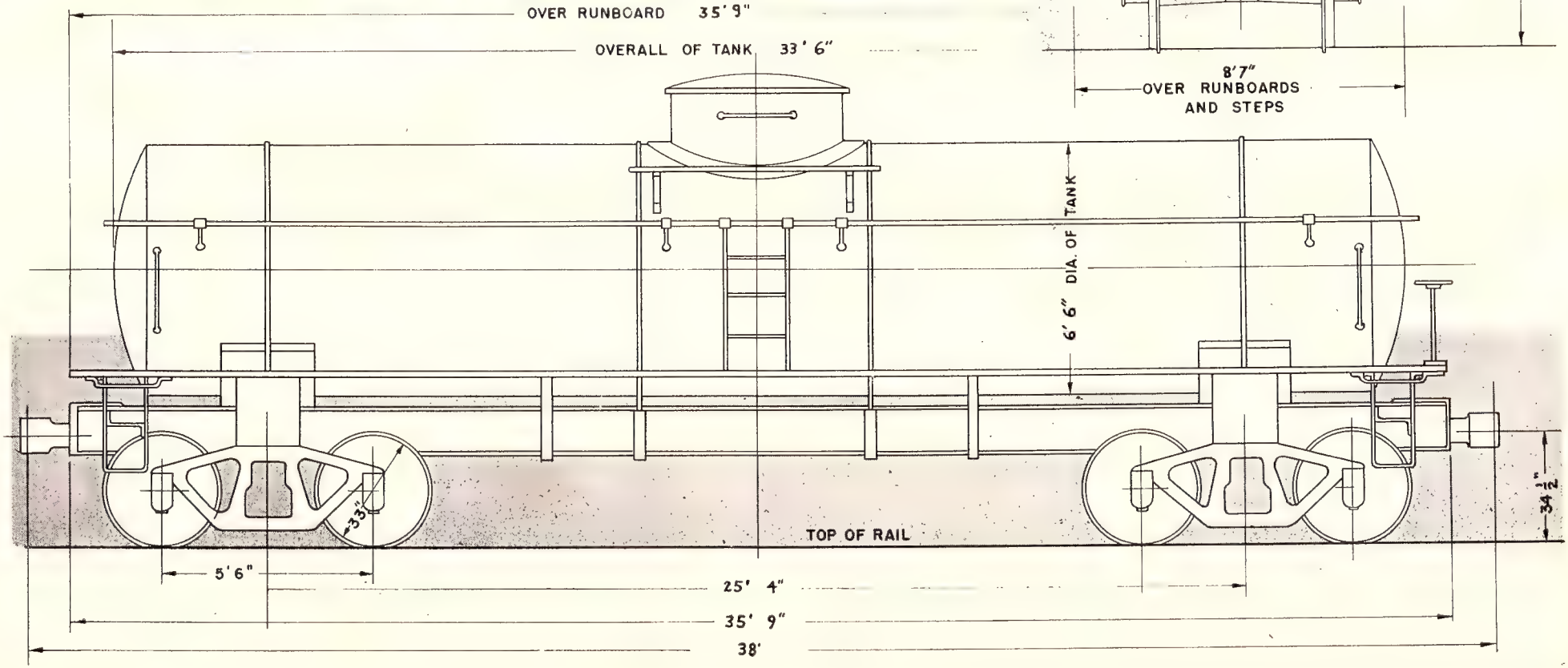
THIS "O" GAUGE INTERURBAN is the work of Louis Sarre, Middleborough, Mass. It was modeled after the Eastern Mass. St. Ry. The motor is mounted rigidly, bevel gears from motor shaft to king pin shaft worm and gear on truck.



TWO HO GAUGE FLATCARS, the work of Paul Dreykus, Newark, New Jersey. On the left is a 42' heavy duty 12 wheeler with brush lettering; on the right is a well-type flat with decals. Note the coupled airhoses and uncoupling levers. A DuPont tarpaulin is covering the load.

New Haven
TANK CAR





Layout Doctor

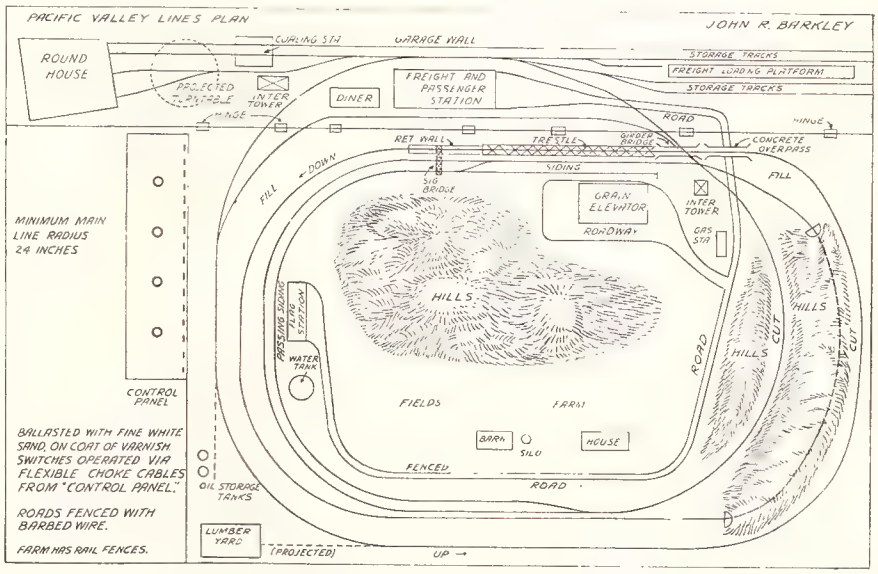
By LARRY SAGLE

This is the first of a series of suggested layout improvements by Larry Sagle, noted authority on both model and prototype railroads. The purpose of these articles is to show the proper location of structures, track and equipment. Suggestions and criticisms will be given that will benefit *all* railroaders. Send in a sketch of your layout and the "Doctor" will help to solve your problems and offer many helpful suggestions. For the initial article, John R. Barkley's prize winning HO layout has been selected.

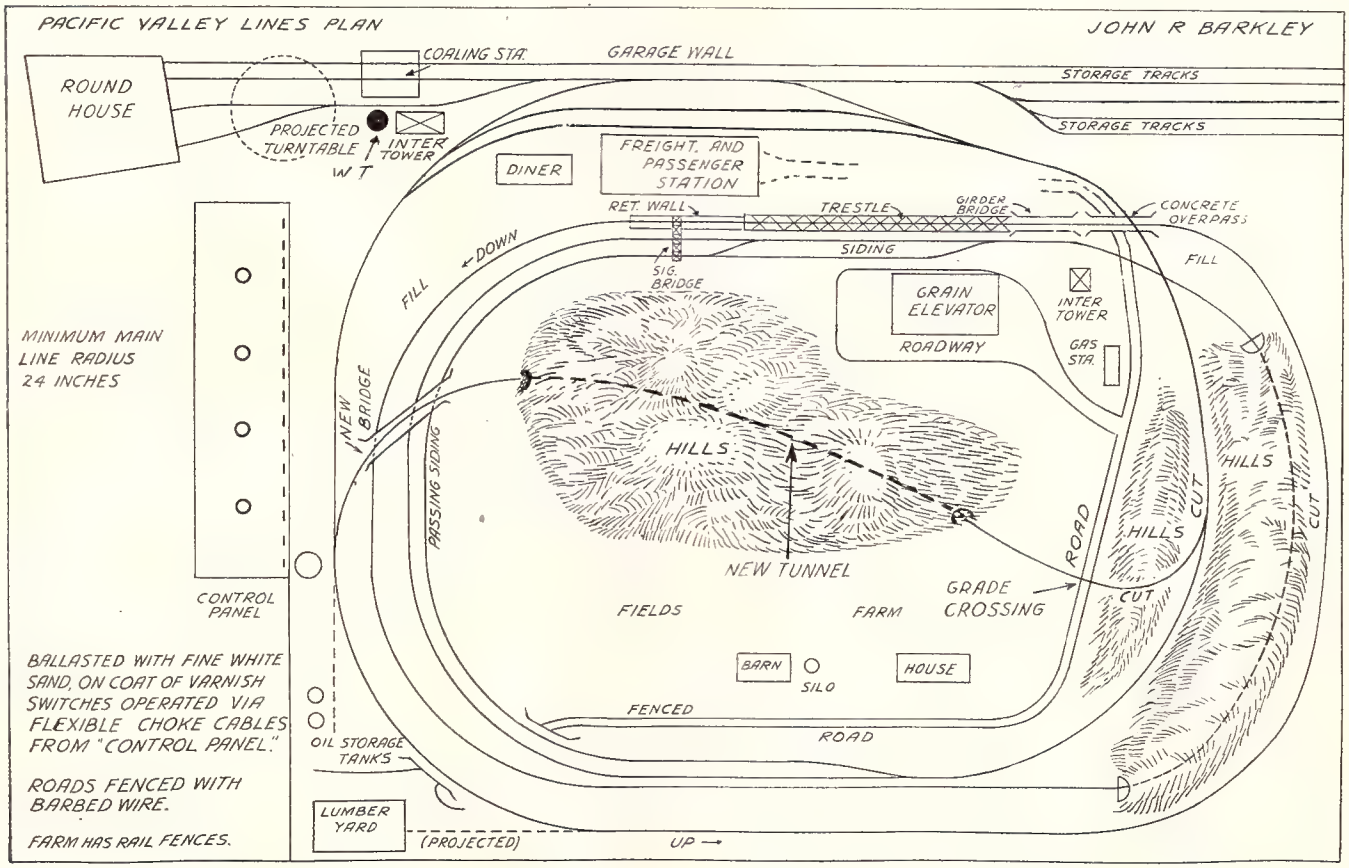
WITH regard to the Model Railroad designed by John R. Barkley, I would eliminate the flag station altogether and move the water tank over to the engine terminal, near the turntable lead where it rightfully belongs. Most model railroaders place their structures haphazardly about the layout with little regard to the prototype. In this case, Mr. Barkley has a coaling station at the roundhouse with no provision for water. The water tank belongs there.

I would change the switch leading from the passing siding to the main line further along, so as to give more room for long freight trains and would eliminate the track which runs behind the passenger station, moving it back to permit two tracks in front of it, one for passenger trains stopping at the station and the other so that freight trains could bypass on the side nearest to the engine terminal and yard tracks. If the station is for both freight and passenger, there should be a side track leading to the freight side and that would make the freight loading platform at the upper right hand corner of the layout superfluous. I would eliminate this and utilize the space for an additional yard track, giving four tracks at that point, all of these coming off a ladder track connecting with the three tracks

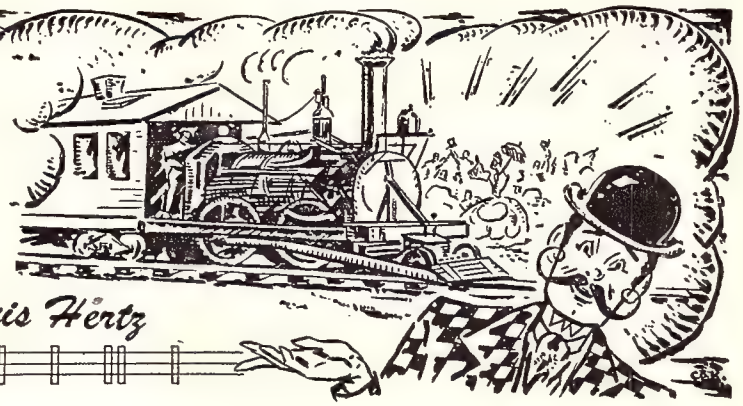
(*Continued on page 42*)



The above layout is John Barkley's excellent HO system. Below is the same layout with changes as suggested by the author.



FIRST IVES CLOCK-WORK TRACK TRAINS



along the tinplate track with *Louis Hertz*

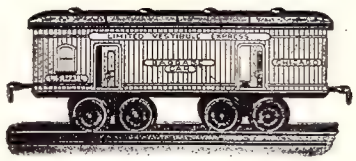
IN THE days when tinplate historical interest was still in its infancy, the first decade of Ives clockwork track trains was a period regarded with the awe we always accord to things which we respect, but know little of. It was a sort of "darkest Africa" of tinplate (one of many, to be sure), from which we had a few catalogs and trains, but very little further collaborative detail or material. Intensive research, and the coming to light of numerous additional specimens of locomotives, cars, accessories, and catalogs, have, happily, changed this picture to an extent we would have imagined impossible ten years ago.

The date always assigned as that of the introduction of these, the first clockwork track trains manufactured in the United States, is 1901. Most readers of this department are unaware that there is some evidence pointing to 1902 as the year in which Ives first actually had track trains in production. This consists chiefly of an article on Ives track trains in the first issue of "Playthings" magazine, January, 1903, in which it is stated that the line was "placed on the market last year." At first thought, this might be dismissed on the grounds that the material for the January, 1903, issue was likely actually written in 1902, when "last year" would mean 1901. However, the same article contains a reference to the effect that equipment in No. 1 gauge has been added, which snarls up things beautifully because according to the catalogs, No. 1 gauge was not brought out by Ives until 1904!

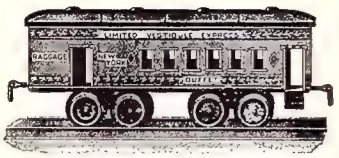
Obviously, this is a matter to which a whole article could be devoted, and all the evidence pro and con—ads, personal recollections, patent application dates, past historical references, etc.—paraded and considered at some length. As we want to speak about the trains themselves this month, we cannot undertake to consider this point in detail now. However, we will state that after carefully considering all the facts now available, at this writing we are still inclined to believe the long accepted date is correct, and that the first production Ives clockwork track trains were manufactured in 1901. If there is enough interest manifested in this point, we will discuss the matter in full at some future date.

The circumstances under which Ives brought out these trains are fairly well established. The company had just about recovered itself from the difficulties which beset it following the bankruptcy of the Ives & Williams Co. in 1897, when the factory burned down in December, 1900. Except for patterns which may have been at the foundry, the tools for all of the old line of Ives toys were destroyed. In new quarters, a decision was made to embark upon an entirely new line of toys, clockwork track trains. Trains of this type had been introduced from Germany in the 1890's and met with considerable success, more or less sounding the death knell for the trackless clockwork locomotives which Ives and others had manufactured. Unfortunately, we do not know if Ives had contemplated and planned this departure prior to the fire, or if it was inspired by the fact that they had to make new tools anyhow. We do have certain personal recollections to the effect that some toy buyers urged Edward Ives to undertake the manufacture of clockwork track trains in the United States.

At any rate, the tooling up was undertaken, the press dies by Haberlin and Hayes, and the patterns for the iron locomotive castings by Ives' patternmaker,

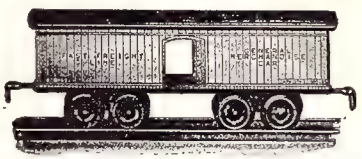


Baggage Car. No. 131. Eight Wheels. Swivel Trucks.

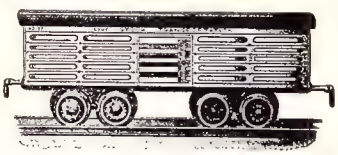


Combination Car. No. 130. Eight Wheels. Swivel Trucks

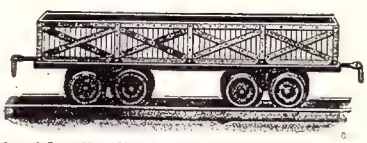
Parlor Car. No. 129. Eight Wheels. Swivel Trucks.



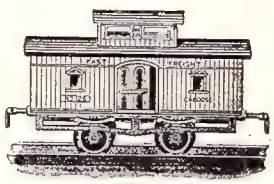
Merchandise Car. No. 125. Eight Wheels. Swivel Trucks.



Live Stock Car. No. 127. Eight Wheels. Swivel Trucks.



Gravel Car. No. 128. Eight Wheels. Swivel Trucks.



No. 126. Caboose.

The Cars pictured on this page are the Newest and Neatest Designs on the market.

Although large and having Eight Wheels, they are not heavy. Locomotives No. 11, 17 and 25 draw them easily.

These Cars are used to make up the different trains that are drawn by Locomotive No. 25, and make a beautiful outfit.

The Merchandise, Live Stock and Gravel Cars are very attractive, and the Caboose is in the same class.

They also go nicely on outfits made up with No. 11 and 17 Locomotives.

Here is a page from the Ives 1904 and 1905 catalogs showing their first eight wheel O gauge cars. It is interesting to note that except for the No. 126 caboose, all of these numbers were retained by Ives on the corresponding cars up to 1930. The passenger cars pictured here were made in three series: white, yellow, and red.

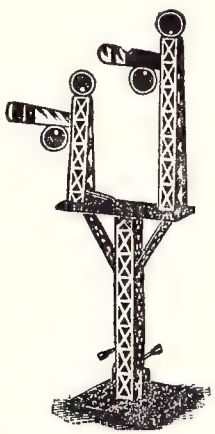
Charles Hotchkiss. The line was patterned after that of Maerklin, the track components and their numbers being identical. Indeed, the track layout diagrams in the early Ives catalogs were taken directly from the Maerklin. Oddly enough although the terms had been rendered into English in the 1901-02 and 1903 catalog, the 1904 catalog uses the words "Prellböcke" (bumpers) and "Drehscheibe" (turntable) in the lists of materials needed under several of the layout drawings. Presumably, cuts were made directly from the Maerklin catalogs, including all lettering, in 1901, the wording discovered and the cuts laid aside and new ones made up. Then, in 1904, the discarded cuts were picked up by mistake and used before anyone noticed the error. The wording was in English again in 1905 and all subsequent years the drawings were used.

When, in 1907, the American Miniature Railway Co. in turn picked up these track layout drawings from the Ives catalogs, they undertook to "disguise" their source by renumbering them in sequence. The Ives drawings were numbers 1 to 109. The American Miniature Railway Co. started by calling the Ives "Fig. 1" their "Fig. 100" and worked up from there to 203, omitting a few of the Ives cuts.

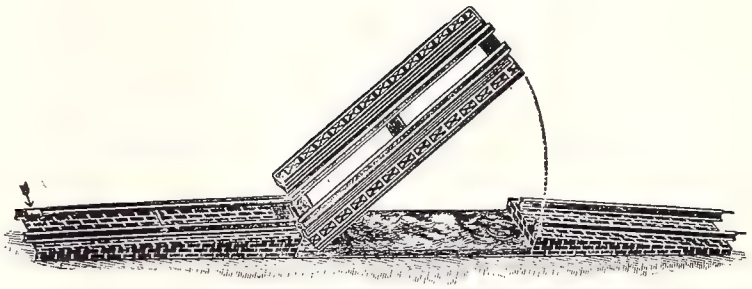
The Ives track was, as noted, originally identical in make-up if not exact style, to the Maerklin. There were six curved sections to a circle, and the Maerklin system of making three types of straight and curved sections was followed. One section had two pins at one end only, a second type had two pins at both ends and the third type had no pins at either end. It was not until about 1909 that some unsung genius made the great discovery that by placing one pin at each end of a section of wind-up track, all need for this multiplicity of sections vanished! This alteration seems to have been originated by Bassett-Lowke, Ltd. The earliest Ives track, made before they brought out their familiar flat track plates, was fitted with little wire clips in the end ties to hold the sections together.

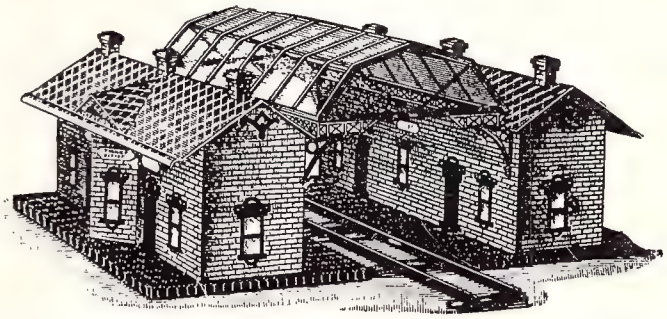
The European influence was far less evident in the early Ives locomotives and cars than in the track, although there

(*Continued on page 47*)

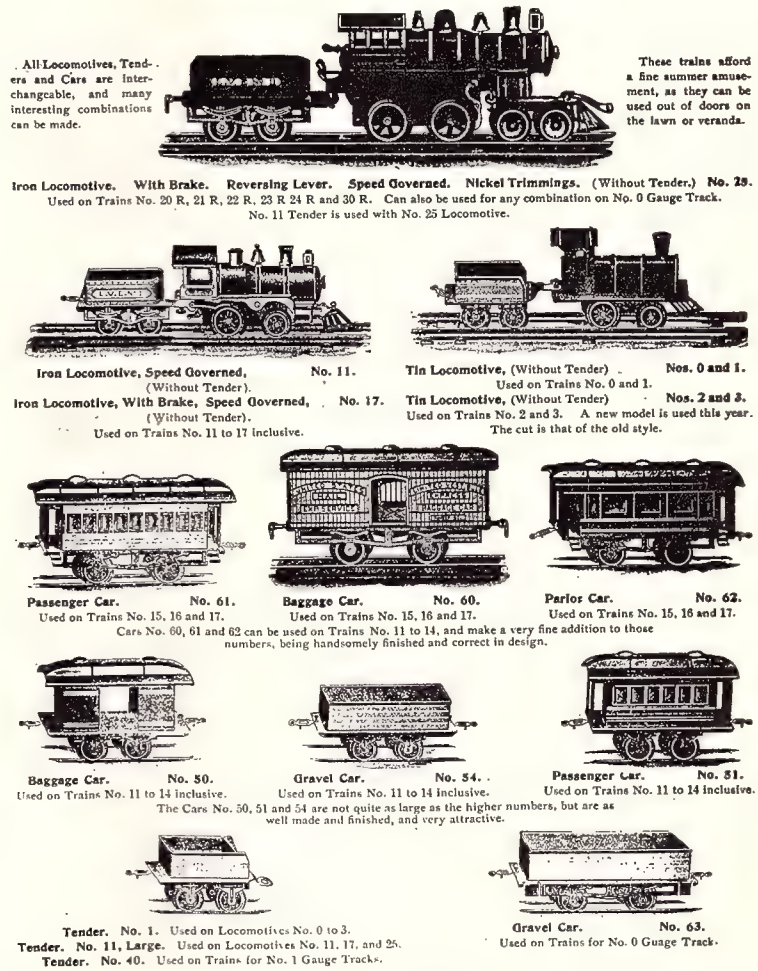


The first version of another very famous and popular Ives accessory, the junction signal, as introduced in 1905.





Early versions of two outstanding Ives accessories are shown here, the automatic roller lift bridge, which dropped when a train approached, and the glass top station shed. Both were introduced in 1905.


All Locomotives, Tenders and Cars are interchangeable, and many interesting combinations can be made.
These trains afford a fine summer amusement, as they can be used out of doors on the lawn or veranda.
Iron Locomotive. With Brake. Reversing Lever. Speed Governed. Nickel Trimmings. (Without Tender.) No. 25.
Used on Trains No. 20 R, 21 R, 22 R, 23 R 24 R and 30 R. Can also be used for any combination on No. 0 Gauge Track.
No. 11 Tender is used with No. 25 Locomotive.
Iron Locomotive, Speed Governed, No. 11. (Without Tender).
Iron Locomotive, With Brake, Speed Governed, No. 17. (Without Tender).
Used on Trains No. 11 to 17 inclusive.
Tin Locomotive, (Without Tender) Nos. 0 and 1.
Used on Trains No. 0 and 1.
Tin Locomotive, (Without Tender) Nos. 2 and 3.
Used on Trains No. 2 and 3. A new model is used this year. The cut is that of the old style.
Passenger Car. No. 61.
Used on Trains No. 15, 16 and 17.
Baggage Car. No. 60.
Used on Trains No. 15, 16 and 17.
Parlor Car. No. 62.
Used on Trains No. 15, 16 and 17.
Cars No. 60, 61 and 62 can be used on Trains No. 11 to 14, and make a very fine addition to those numbers, being handsomely finished and correct in design.
Baggage Car. No. 50.
Used on Trains No. 11 to 14 inclusive.
Gravel Car. No. 54.
Used on Trains No. 11 to 14 inclusive.
Passenger Car. No. 51.
Used on Trains No. 11 to 14 inclusive.
The Cars No. 50, 51 and 54 are not quite as large as the higher numbers, but are as well made and finished, and very attractive.
Tender. No. 1. Used on Locomotives No. 0 to 3.
Tender. No. 11, Large. Used on Locomotives No. 11, 17, and 25.
Tender. No. 40. Used on Trains for No. 1 Gauge Tracks.
Gravel Car. No. 63.
Used on Trains for No. 0 Guage Track.

A page from the Ives 1905 catalog showing their line of O gauge clockwork locomotives and four wheel cars. Except to point out the link couplers on most of the cars and tenders, we need add nothing by way of explanation. To those interested in these old timers, this page reproduction speaks for itself.

Springfield, N. J.
on the
RAHWAY VALLEY R. R.

By WARREN CRATER

HERE is a small section of a "Short Line" which seems to be ideal for modeling purposes. The layout of Springfield, N. J. on the Rahway Valley R. R. was the inspiration for a section of my New Jersey Terminal which is being described in MODEL CRAFTSMAN. It was necessary to make some minor changes to fit a particular space in the layout, but the prototype characteristic furnished the necessary start.

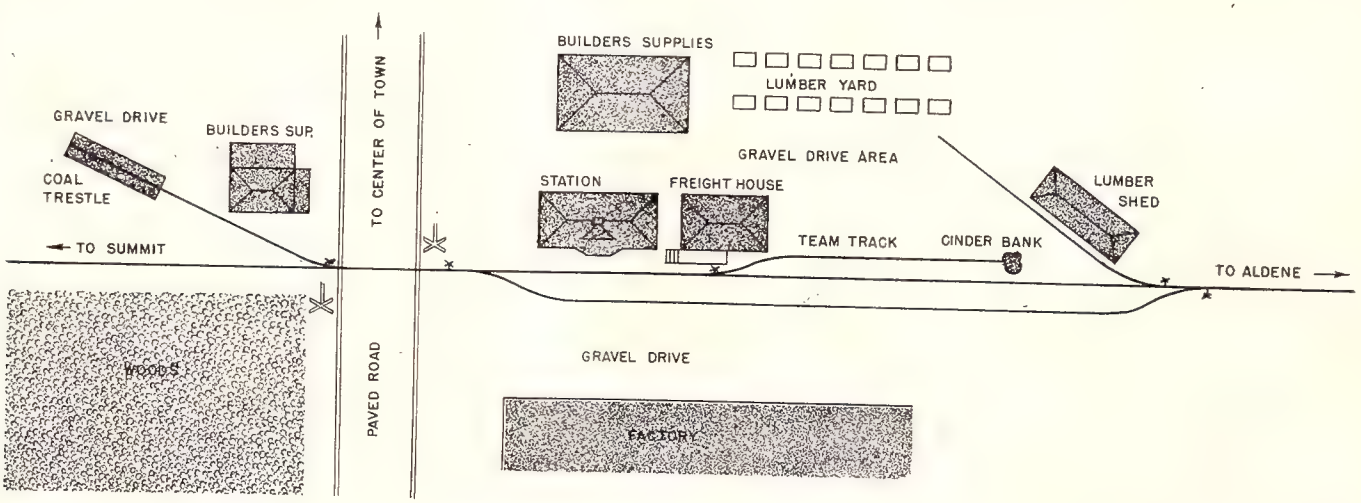
The accompanying diagram is not to scale. This, however, is not important, so will give the approximate distances and dimensions.

The station windows and doors are 2' 9" x 5' 2" and 3' x 7' respectively. Other dimensions may be taken proportionately from the photos. The station is about 40' long by 18' deep surrounded by a gravel platform. The freight house is about 35' x 18' with floor at car floor level. The builder's supply shed, on the coal trestle track is about 24' square with a platform toward the street and a door toward the track. The floor is at car floor level. One box car can be spotted at the door and will just clear the main track.

The coal trestle, with level track, will hold two cars. Since the ground falls away about ten feet, the cars are unloaded by gravity and delivery trucks go readily to be loaded.

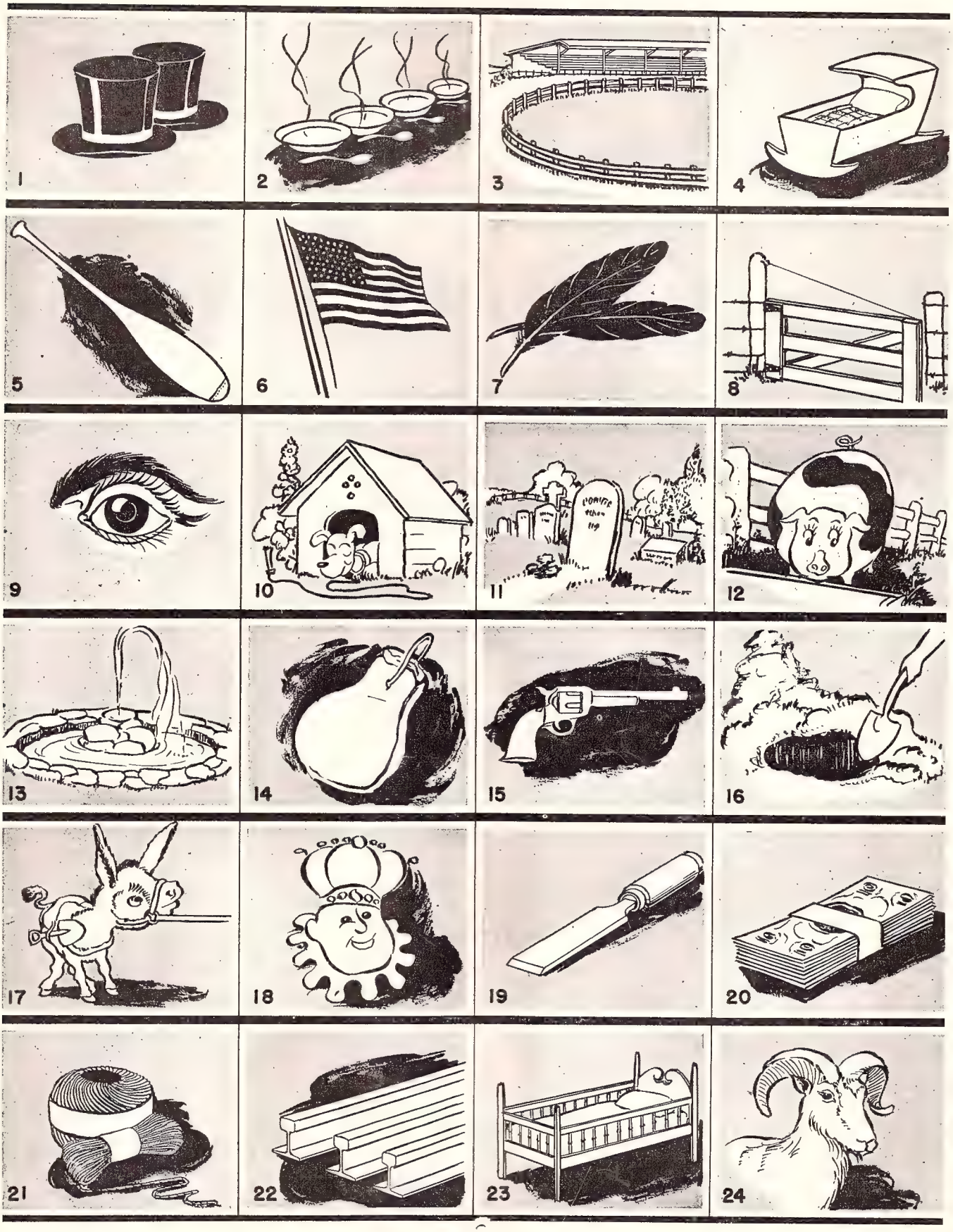
The team track holds five 40' cars as does the lumber yard track. The lumber shed, about 80' long is open toward the track and has a flat roof sloping away from the track.

The passing track is not used for that purpose, since the R. V. only works one engine. As can be seen in the sketch, there are both facing and trailing switches, so this track is used as a run around to get cars ahead of the engine. This obviously is necessary in order to spot them on tracks reached by facing switches. It is also used to get cars from these tracks behind the engine for road haul. Length of passing track will accommodate about twelve 40' box cars.



Proto Quiz

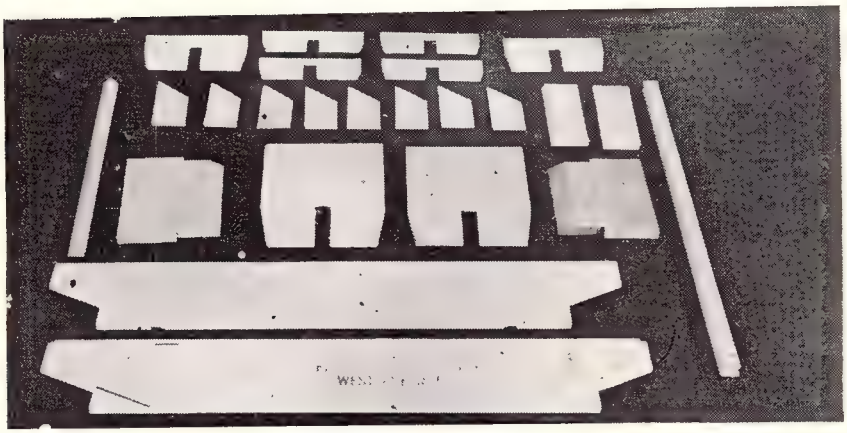
Here is another quiz based on prototype ideas. All of the figures below represent common *slang* terms used frequently on all the railroads throughout the country. Again 50% correct is a very good average! Associate the ideas and turn to page 48 for the correct answers.

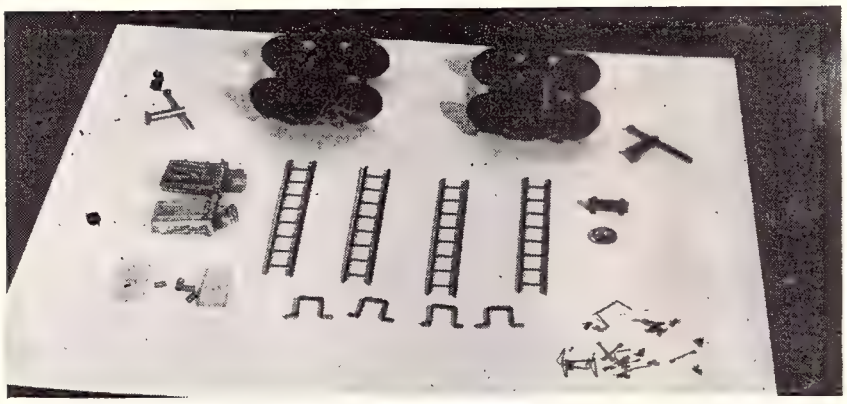


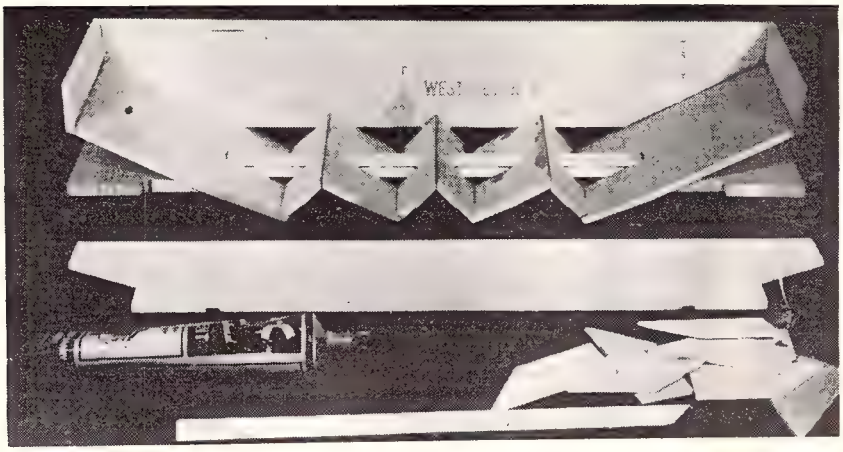
THE model railroad fan just starting in the hobby generally begins by purchasing a freight car kit and assembling it evenings on the kitchen table which doubles for a work bench when not in use as a table. If the kit is one that has been made with the idea of using a lot of tools to finish castings or do a lot of drilling, the beginner gets discouraged and may even quit the hobby altogether. It is not the purpose of this article to run down car kits in the reader's mind for there are many excellent kits on the market today.

A BEGINNER'S HOPPER CAR

By L. A. BARTHOLOMEW







Some are easy to assemble; others are not. As a general rule, kits made predominately of wood are easy to assemble, while those made with castings, especially aluminum, are not. I have a gondola kit made of 5 aluminum castings which, with the aid of several tools, such as drills, taps, and file was made up as far as body assembly was concerned and there it rests these many years because I have not discovered any way to hang the rest of the hardware on it so that it will not loosen and fall off. The same goes for other metal kits where castings are employed.

On the other hand a wooden body kit makes up easily with a little airplane cement and lils (bank pins). We are going to tell you how to utilize one manufacturer's answer to the model rail fans prayer that something simple be devised. It is the Picard body kit, made by the Picard Novelty Company, Westerly, Rhode Island, and obtainable at most hobby stores in 3 gauges, "O", "OO", and "HO". The prices of them are reasonable, the material excellent, and the hard part of any model, shaping of the individual pieces, has been done on precision machines for you.

They are made of white bass wood, grooved and rabbetted where needed so that parts nearly fall together. With a Picard body kit for a foundation the modeler can't go wrong. The hopper car described in this article is made on the 41 foot long quad hopper body. Another size is also available, the 33 foot dual which is really more of an ore car.

As can be seen by the photo, there are several wooden pieces to fit together. The photo of the partially assembled body gives a graphic idea of how these several pieces fit together. In it all that is left to assemble is the triangular piece that fits on top of the center sill between the hoppers. A piece of triangular shaped wood sufficient for the 4 pieces is furnished. Then the side piece is fitted on and glued. The small pieces of wood in the right foreground are then fitted on the hopper sides and trimmed off with a sharp

knife. Next some small pieces of thin cardboard (not furnished) are cut and glued to the center sill to cover the triangular shaped holes you see under it. Four corner braces are made and glued in place. This finishes the car body except for ribs. Use Bessey ⅛ x ⅛ inch T shape for them. Two pieces, each three foot long should be ample. There are eleven on each side. Begin with the middle rib and measure each way for the remaining ones. Be sure to get them on evenly and perpendicular.

The brake cylinder is placed on one end on top of the floor, not under it. If in doubt as to placement look at a real railroad hopper car and note where each part is placed. The brake wheel is of the Ajax type and is fitted on one end of the car. If preferred, the old type wheel can be used. It would project above the car slightly. A piece of small hard brass wire would do for the brake staff. A brake platform attached to the end of the car makes a place for the brakeman to put his feet, when winding up the brake.

Ladders or grab irons can be used or a combination of both for the ends and sides of the car. A word about king pins and bolsters. The bolsters can be made of wood of the correct height so that when the car body with bolsters attached are resting on the trucks, the center line of the couplers will be 1 1/16 inch above the top of the rail. This is important. The king pins can be made of a long copper rivet such as harness makers use with a very small hole drilled in one end to receive a cotter key. King pins are shown in the hardware photo at the right and left of the trucks. They should be inserted from the top down through piece #4 of the wooden floor piece before assembly of the body proper. Another method of making king pins is to use a piece of #8 copper wire, drilling a small hole through one end to receive a cotter key. They are mounted by drilling a hole for a squeeze fit in the underside of the car body, using glue on the #8 wire to hold it tightly in the hole. After the trucks are placed on the king pins a washer and cotter key will hold them on. For couplers, Athearn spring draft gear was used. It fastens with small pins to the underneath side of the car floor. 4 stirrups are fastened with pins to the sides near the ends. It is best to use a good make of truck on the car if trouble free service is to be expected. Use either Auel or Athearn.

Now with the car assembled, the next step is painting. Use a good grade of model railroad paint. The model car pictured was painted box car red, but black is used a lot on the prototype roads. The final part is the applying of the decals, directions come with the decals. It will repay the builder to be extremely careful in applying the decals to get them on straight and rightly spaced. No drawings are furnished with this article as it is felt that the average modeler can with the aid of the photos build his own car.

RIDING THE RODS

To railroad men, since the advent of the first puffing steam train that labored its way across the prairies, the phrase "Riding the Rods" has always stood for romance, adventure—"the good old days!" Stories of adventure during the early railroad era have always been keenly enjoyed by all types of railroad enthusiasts. For this reason we recommend a real treat for you, LOUIS H. HERTZ fascinating and entertaining

RIDING THE TINPLATE RAILS

BECAUSE: This book tells an equally interesting tale—the romance and history of toy and model trains. It takes one back with nostalgic memory to the joy of ownership of the first miniature train set—the little old "winder-upper"—the pride and plans for a bigger and better "railroad" which persisted throughout the years, and which today finds culmination for so many in membership in the great fraternity of "MODEL RAILROADERS."

Not only the pioneers but the new blood starting out in model railroading today, with all the modern facilities and equipment, will enjoy this interesting tale of miniature railroading. Here in this book may be found the pioneers of the 1860's, their crude trains of wood or tin—the first daring experiments with steam operated models, the coming of the electrics and the histories and personalities of the names that made this progress in miniature railroading possible.

279 pages, profusely illustrated with photographs and rare wood blocks of over 150 models and scenes, beautifully bound in cloth and boards and lettered with gold leaf imprints, $3.50 per copy.

We sincerely recommend for your pleasurable reading

RIDING THE TINPLATE RAILS

by Louis H. Hertz

Recommended books on Diversified Modeling.

Iron Horses	$6.00	Highliners	$5.00
High Iron	6.00	Model RR Plan Package	1.00
Cable Car Days	3.00	High Ball	6.00
Railroad Avenue	3.75	Slow Train to Yesterday	3.00
Model Gas Engines	2.50	How to Run a Model RR	2.00
Model RR Engineering	3.50	Model Aircraft	2.50
Making and Operating a Model RR	3.00	The Built-Up Ship Model	5.00
American Ship Models	7.00	Ship Model Building	2.50
How to Build a Model Navy	2.50	Model Airplane Design	3.75
Fun with a Model RR	1.00	Book of Rules for Model RRs	2.50
Model Railroads	6.00	How to Build a Model RR	2.00

MODEL CRAFTSMAN

Dept. 207, Ramsey, New Jersey

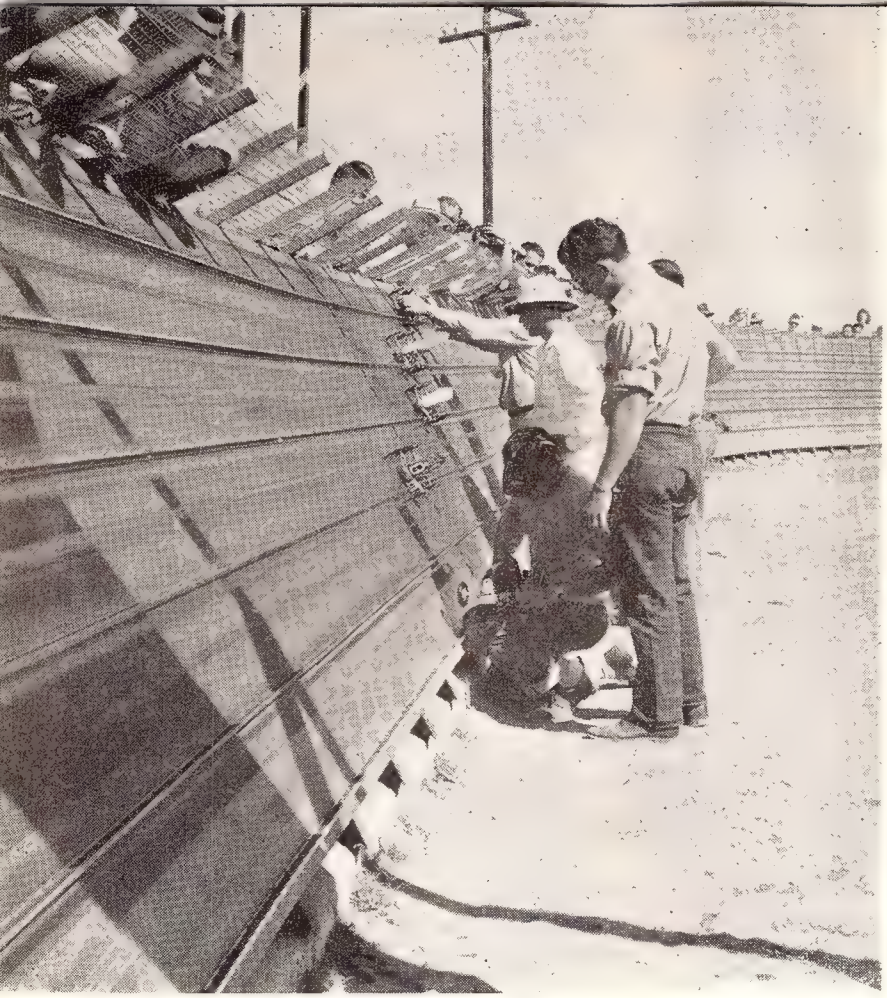


Photo by Frank Pawlikowsky

and place the bolts in the holes with the nuts on the top of the thread or at the end of the bolt. When pouring the concrete, have ample men available to lay these lower braces in place. These can be set at right angles with the inner radii of track. It would be a good idea to make up a large T square with a couple of blocks that will rest against the outside of the inside form to use as a guide in getting this piece at right angles. Shove the bolt head down into the concrete and take a tamper and compress the concrete around the bolt. After the bolt head has been shoved into place, add a trowel or two of concrete to this point and smooth off. Pour the cement slowly so that the lower braces can be inserted before the concrete sets too firmly.

Allow the concrete to set for at least three days and then tighten the nuts holding lower braces to the concrete foundation. You are now ready to install the running surface braces which are located at the same point as the foundation brace and also the rear brace which will vary in length all around the track with the exception of Stations 42.00 to Stations 00. These stations constitute a constant radius and angle, the back supports can all be cut the same length and angle on the ends as shown on the plans.

The next step is to locate your radii point for the ends of the track and pour a concrete footing around a 6′ length (above the ground) of 1″ straight shaft-

6 Lane Rail Track

By RAY SNOW

REPORTS are pouring in from all over the country as to the speeds made on the new one-twelfth mile rail track of the Hornet Motor Company in Fresno, Calif. In every case, the writers praise the sound principles used, the solid construction and smooth running surface. All the present world's records for rail have been made on the Fresno Track.

Following are the recommended instructions on the construction of a six-lane rail track of one-twelfth mile circumference. With a little engineering experience, the dimensions given can be adapted to any size track. The principles used in constructing this track were very sound, this has been proven many times over. The designer, Ray Snow, has done a fine job.

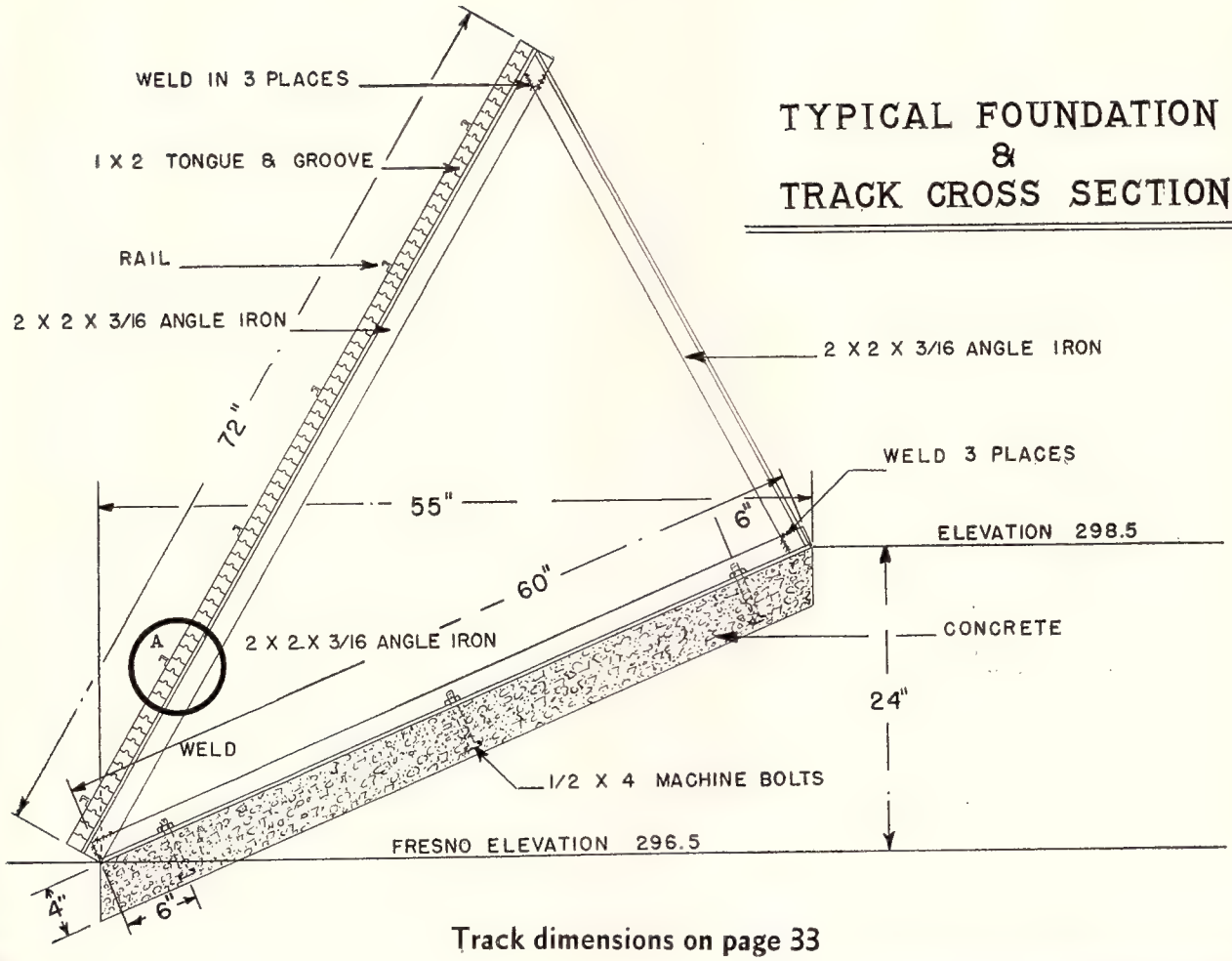
The first step towards building any track is the location of the property, this particular track requires at least 200′ x 125′ to allow ample standing room. A rough layout should be made on the ground, center lines established preparatory to excavation of two feet as shown in "Typical Cross Section of Foundation." It will be necessary to finish off the angle by hand unless grading equipment can be found to cut the angle on the bank as shown. Without the 2′ depression, certain sections of the track would be 6′ high and spectators would be unable to see over the top if built on the same elevation. Excavating is cheaper than building stands and will also conserve 2′ on the rear uprights all around the track. It is also best to angle this pour as the angle tends to brace the foundation. Have the cement brought out dry in a transit mix truck and add water on the job to assure proper consistency so that a closed form will not be necessary.

After the excavation is complete, forms should be set according to dimensions shown on the accompanying plan allowing the inside edges of the form to strike at elevation points 296.5 and 298.5. After double checking your forms and being sure you have room for at least 4″ of concrete, cut your base pieces that lay parallel to face of concrete foundation, which are angle iron 2″ x 2″ x 3/16″ by 60″ long. Lay these outside of the track after the three holes have been drilled

ing. In order to measure before welding stations that are in the constant radius, use a piece of piano wire attached to the pole with a ball bearing or plain bearing so that you can set wire at proper level and go around this radius to check location of the footing for the bottom weld and also to have a wire to check location of top weld. The length of this wire can be determined by taking a measurement from any station from 24.00 to 32.00. This will be an easier method of measurement than the offset method as shown on the drawing. The tangent method will have to be used on your spiral curvature leading into the constant radius and, if there has been a slight error in length in your constant radius, you can deduct or add to the measurements shown on the plans for determining locations of Stations 44.00 to 110.00. Figures have only been mentioned for one quadrant of the track as they can be duplicated in other three quadrants.

On arriving at the center line for the spiral curvature, use your same two shafts that have been set in concrete and stretch a tight wire at least 1/8″ in diam-

TYPICAL FOUNDATION & TRACK CROSS SECTION

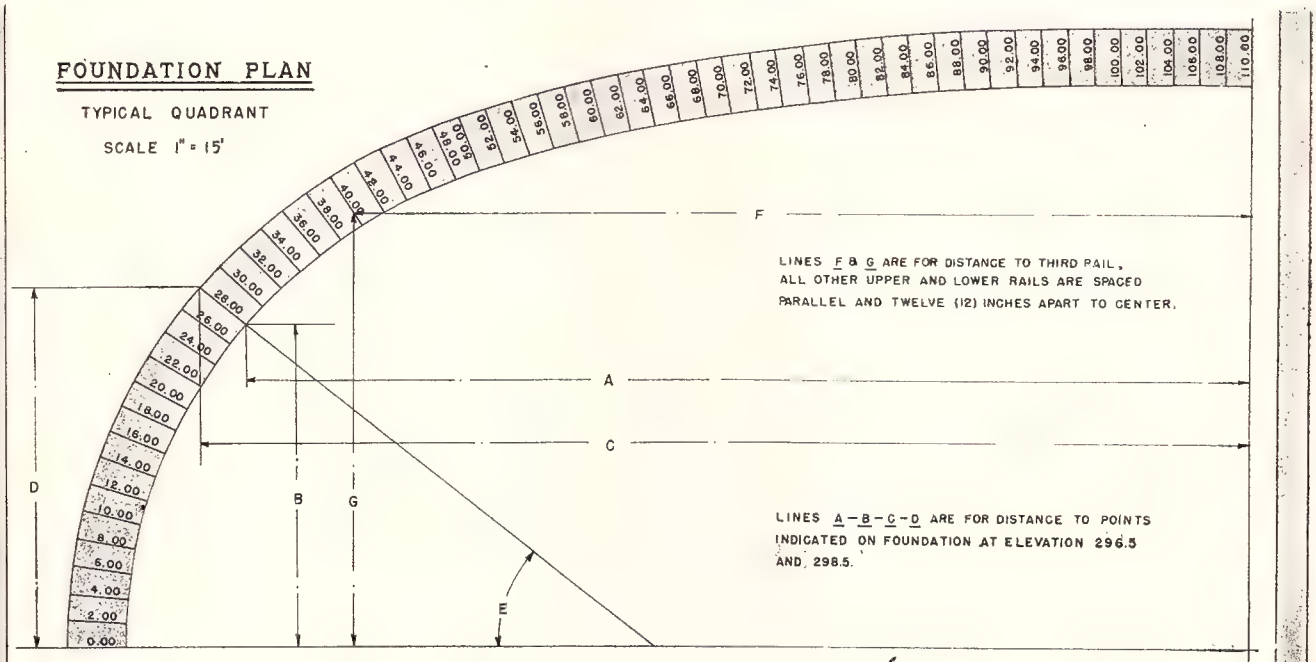


Track dimensions on page 33

FOUNDATION PLAN

TYPICAL QUADRANT

SCALE 1" = 15'


F
A
C
D
B
G
E
LINES F & G ARE FOR DISTANCE TO THIRD RAIL, ALL OTHER UPPER AND LOWER RAILS ARE SPACED PARALLEL AND TWELVE (12) INCHES APART TO CENTER.
LINES A-B-C-D ARE FOR DISTANCE TO POINTS INDICATED ON FOUNDATION AT ELEVATION 296.5 AND 298.5.

6 LANE RAIL TRACK DESIGNED BY Ray M. Snow

BUILT AT FRESNO CALIF.

MATERIAL LIST

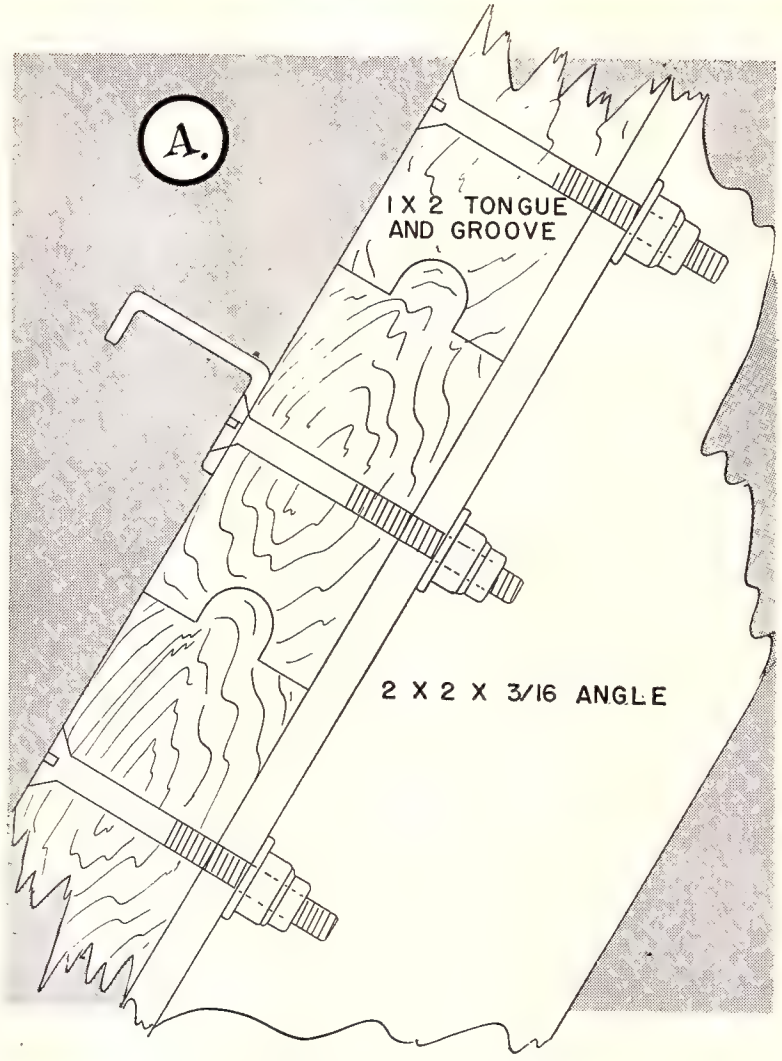
1. 1000 LINEAL FEET 1" X 6" PINE FOR CONCRETE FORMS
2. 41 YARDS CONCRETE (TRANSIT MIX TO SUIT ANGLE POUR)
3. 880 1" X 3" PINE STAKES 18" LONG FOR CONCRETE FORMS
4. 3,660 FEET 2" X 2" X 3/16" ANGLE IRON
5. 660 4" X 1/2" MACHINE BOLTS.
6. 15,840 LINEAL FEET 1" X 2" TONGUE AND GROOVE WHITE CEDAR
7. 2,640' RAIL
8. 7,920 10-32 X 1 3/4" FLATHEAD MACHINE SCREWS CADMIUM PLATED
9. 7,920 10-32 LASTIC STOP NUTS AND WASHERS

eter between these poles at the base elevation. In other words, the elevation at 296.5. These elevations can be changed to suit your local altitudes and are for reference only. From this tight wire you can take your B dimensions and your G dimensions when it becomes necessary to check B and G dimensions.

When the foundation for the Fresno track was laid, the tight wire method was not used. Everything was done from a chalk line stretched across the ground at center lines. This is accurate enough for the foundation but it might be a very smart idea to lay these two lines, especially the radii points for the ends of the track, mounting your vertical shafts and stretching your tight wire between shafts for easy measurements and lay out the foundation.

Much drilling is necessary to lay wood surface on the 72" x 140' running surface and it is best to start with the bottom strip of 1 x 2 Tongue and Groove first and do not make joints at any of the stations. Make all your wood butt joints first between stations and nail to another piece of 1 x 2 by about 12" long which should be supported with something heavy when driving nails through both pieces. This is to hold proper contour of track and overlap all joints. *Do not make them at the same points.* There is room for argument on this. You may choose to start at the top and work down. It really does not make much difference, but be sure and stagger your starting points when laying the running surface. After this surface has been put on, if there is any unevenness in the height of the lumber, it will be necessary to set all nails that might be sticking up at the butt joints of the lumber and use a plane to remove high spots. You can eliminate a lot of this work by having the lumber run off in a planing mill that will be very careful about the thickness and width of same.

After the track has been smoothed off, and all screws pulled up snug, it will be necessary to locate the rails which will come in the center of each strip. The first one being located on the second from the bottom strip, the second one on the eighth strip from the bottom, the third on the 14th strip, the fourth on the 20th strip, the fifth on the 26th strip and the top and last rail on the 32nd strip from the bottom. The sixth rail being completed, it will be necessary to install rollers across track for starting facilities. You can use your own judgment on this. The rollers should be at least 4" in diameter and can be staggered if you desire. One long roller may be built across the track, backing up this opening with a steel plate on the bottom or under side of the track.



SCALE ACTUAL

Photo by Frank Pawlikowsky

Pit scene at the Fresno rail track. Note the loudspeakers, the shaded area and the lights for night running.

The best method of installing rollers would be to stagger them 42" apart with top roller about 12" back of starting line and the second roller, which would be on rail #5, 42" back of that. The next roller, which would be on rail #4, 42" back of #5, #3 42" back of #4, etc. The reason for this dimension in stagger is that there is 14" difference in circumference per lap and the top rail is the longest distance around the track so that in a three lap race (a quarter mile) it would be advisable to locate these rollers to suit. For running a half mile race, it will be necessary for everyone to move back double this distance, or 84". Lines can be marked on the track with paint indicating half mile and quarter mile starting points.

To double check, it would be advisable to measure the circumference on each rail after the track is completed to determine starting points and variation in distance between each rail. It would be advisable to measure the circumference with a steel tape, laying the tape on the outside or top edge of the rail and

Dimensions for Fresno Track

DIMENSIONS INDICATED ON FOUNDATION						DIMENSIONS INDICATED ON TRACK		
Point	A	B	C	D	E	F	G	H
0.00	86.367	0.000	90 950	0.000	0-00	86.453	0.000	85-46
2.00	86.315	1.995	90.892	2.224	2-52	86.403	1.999	85-46
4.00	86.166	3.984	90.726	4.451	5-44	86.253	3.993	85-46
6.00	85.916	5.965	90.447	6.651	8-36½	86.003	5.978	85-46
8.00	85.570	7.930	90.062	8.840	11-27½	85.656	7.947	85-46
10.00	85.124	9.875	89.565	11.009	14-19½	85.209	9.897	85-46
12.00	84.583	11.795	88.961	13.148	17-11½	84.667	11.821	85-46
14.00	83.945	13.686	88.250	15.256	20-03	84.028	13.716	85-46
16.00	83.214	15.543	87.436	17.327	22-55	83.295	15.577	85-46
18.00	82.392	17.361	86.518	19.352	25-47	82.471	17.399	85-46
20.00	81.579	19.136	85.599	21.334	28-39	81.556	19.178	85-46
22.00	80.479	20.862	84.389	23.256	31-31	80.554	20.908	85-46
24.00	79.394	22.536	83.180	25.119	34-22½	79.467	22.586	85-46
26.00	78.226	24.155	81.875	26.928	37-14½	78.296	24.208	85-46
28.00	76.978	25.716	80.479	28.668	40-06½	77.045	25.773	85-46
30.00	75.656	27.206	79.010	30.328	42-58½	75.720	27.266	85-46
32.00	74.261	28.634	77.453	31.916	45-50	74.321	28.697	85-46
34.00	72.795	29.985	75.820	33.429	48-42	72.853	30.051	85-46
36.00	71.264	31.264	74.112	34.849	51-34	71.319	31.333	85-46
38.00	69.667	32.465	72.330	36.190	54-26	69.718	32.537	85-46
40.00	68.018	33.585	70.496	37.443	57-17½	68.066	33.659	85-46
42.00	66.312	34.621	68.593	38.596	60-09½	66.356	34.697	85-46
44.00	64.536	35.530	66.627	39.602	62-51	64.595	35.646	85-09
46.00	62.720	36.366	64.603	40.521	65-07	62.796	36.530	84-19
48.00	60.874	37.109	62.659	41.329	67-04½	60.965	37.323	83-28
50.00	59,007	37.804	60.664	42.072	68-48	59.110	38.070	82-38
52.00	57.122	38.448	58.668	42.764	70-20	57.235	38.765	81-48
54.00	55.232	39.047	56.675	43.319	71-43½	55.353	39.411	80-59
56.00	53.337	39.595	54.678	43.980	72-59½	53.465	40.015	80-09
58.00	51.385	40.107	52.626	44.515	74-18	51.517	40.578	79-20
60.00	49.449	40.582	50.607	45.017	75-13½	49.587	41.104	78-31
62.00	47.509	41.019	48.601	45.568	76-13½	47.650	41.594	77-43
64.00	45.559	41.428	46.579	45.886	77-09½	45.702	42.053	76-55
66.00	43.603	41.803	44.547	46.285	78-02½	43.747	42.480	76-07
68.00	41.644	42.150	42.529	46.650	78-52	41.787	42.879	75-19
70.00	39.680	42.464	40.495	46.976	79-45	39.821	43.249	74-31
72.00	37.713	42.759	38.479	47.279	80-23	37.852	43.594	73-44
74.00	35.740	43.028	36.449	47.557	81-05½	35.878	43.915	72-58
76.00	33.764	43.273	34.420	47.810	81-46	33.900	44.212	72-12
78.00	31.787	43.493	32.376	48.038	82-24½	31.919	44.485	71-26
80.00	29.805	43.696	30.362	48.245	83-01	29.935	44.738	70-40
82.00	27.826	43.874	28.337	48.429	83-36½	27.949	44.971	69-55
84.00	25.843	44.035	26.308	48.594	84-10½	25.960	45.182	69-11
86.00	23.858	44.158	24.280	48.721	84-43	23.969	45.357	68-27
88.00	21.873	44.333	22.253	48.900	85-14½	21.977	45.584	67-43
90.00	19.886	44.401	20.225	48.972	85-45	19.983	45.704	67-00
92.00	17.899	44.489	18.201	49.062	86-14	17.988	45.843	66-17
94.00	15.911	44.561	16.164	49.136	86-42½	15.992	45.965	65-35
96.00	13.922	44.613	14.148	49.190	87-10	13.994	46.069	64-53
98.00	11.934	44.654	12.125	49.233	87-36½	11.996	46.160	64-12
100.00	9.945	44.677	10.102	49.257	88-02½	9.998	46.235	63-31
102.00	7.956	44.687	8.079	49.286	88-27½	7.999	46.295	62-50
104.00	5.976	44.681	6.058	49.263	88-51½	5.999	46.341	62-10
106.00	3.978	44.663	4.037	49.245	89-15½	4.000	46.372	61-31
108.00	1.989	44.631	2 018	49.214	89-38½	2.000	46.391	60-52
110.00	0.000	44.583	0.000	49.168	90-00	0.000	46.398	60-10

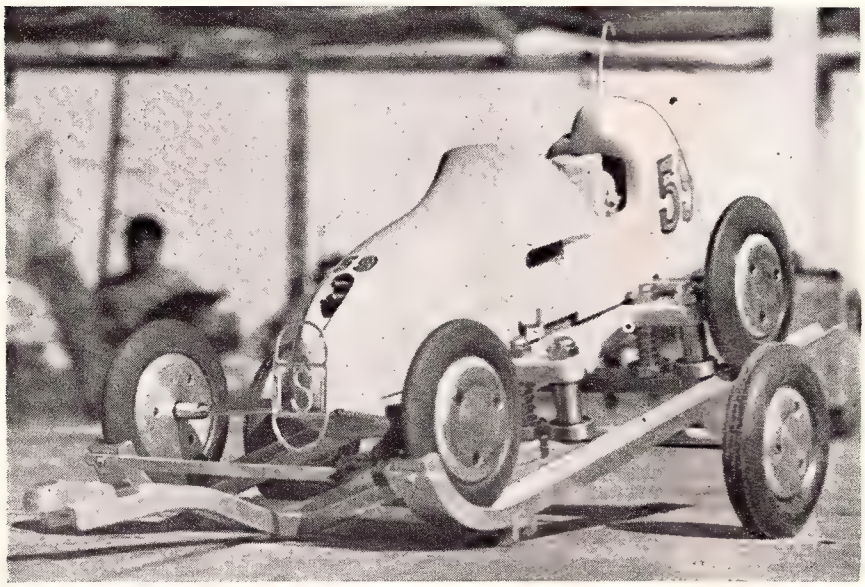


Photo by Frank Pawlikowsky

W. E. Schackleford's record breaking Curly Car. It holds the IMRCA world's record for rail at 97.29 mph, made at the Fresno track on Sept. 21st.

then figuring the distance to the center of the car to determine the circumference so that the starting lines can be painted on the track for both the ¼ and ½ mile runs.

According to the calculations made on the Fresno track, the third rail from the bottom should be located so as to give a 440′ circumference which is exactly one-twelfth mile.

If the track flexes too much with a group of cars making the turn, it would be advisable from Station 60.00 to Station 00.00 to weld a brace running from the center of the track surface support down to elevation point 298.5. Welding this piece in will make the track much more rigid and decrease danger of breaking weld at the top and bottom where most of the flexing will take place. As you must realize, there is an approximate 680 pound load if all the cars are in the same position at the same time with the cars traveling at 80 mph. As the speed decreases below this, the load becomes less. This fourth member in this triangle will tend to give the track much longer life.

The cost of a track as described here will vary with the size and section of the country. Much of the expense can be eliminated if club members do the labor.

FROM SALINA

By JOE ADDISON

WELL, fellas, you just can't tell what is going to happen in the sport of racing. It doesn't seem to make much difference how high you are on the speed ladder, there always seems to be someone that can get a bit higher. A glance at the following speed records will show beyond doubt that some of the boys are eating a lot of dirt from drivers that have had to eat their dirt in the past.

The Salina racers are slowly but steadily increasing their speeds and have been able to hold their own with outsiders who have raced on the track. About this time someone is going to drop in and rip off a new speed that will cause many an eyebrow to lift.

Right now Al Goedde is out in front in the spur, and it appears that "Corky" Stclair must have fired his mechanic and went to work on his car in person since it has been steadily climbing upwards. Many of the boys are playing around with various combinations of equipment, gas tanks getting a lot of consideration. Bill Preston is giving the magneto deal a whirl and is getting good results. Bob Lieker is trying out a Dooling-Dooling combination which has promises of being a very hot job. A lot of concentrated work will be done this winter, evidence will be seen in the spring with higher speeds. Bill Stclair and Joe Addison are working on a lap counter in connection with the 1/100 second timer; this will produce a good timing system if the boys are smart enough.

On Oct. 19, Cliff Sievert, of the Pueblo club stopped in to race and found considerable difference between Salina and high altitude racing. The Salina Club was mighty glad to have Cliff drop in and assures him he is welcome at any time.

Following are the highest speeds of recent meets:

SPUR

Al Goedde	McCoy-Hornet	107.39
Corky Stclair	Matthews-McCoy	104.77
Ben Smith	McCoy-Hornet	101.58
Floyd King	McCoy-Hornet	101.58
Jack Smith	McCoy-Hornet	100.55
Roy Goedde	McCoy-McCoy	99.66
Ev Vernon	McCoy-Hornet	96.15
Don Moden	McCoy-Hornet	93.07

PROTO

Bob Lieker	Dooling-Dooling	93.55
Joe Addison	Pacemaker-Hornet	92.30
Cliff Sievert	Hotrod-McCoy	87.20

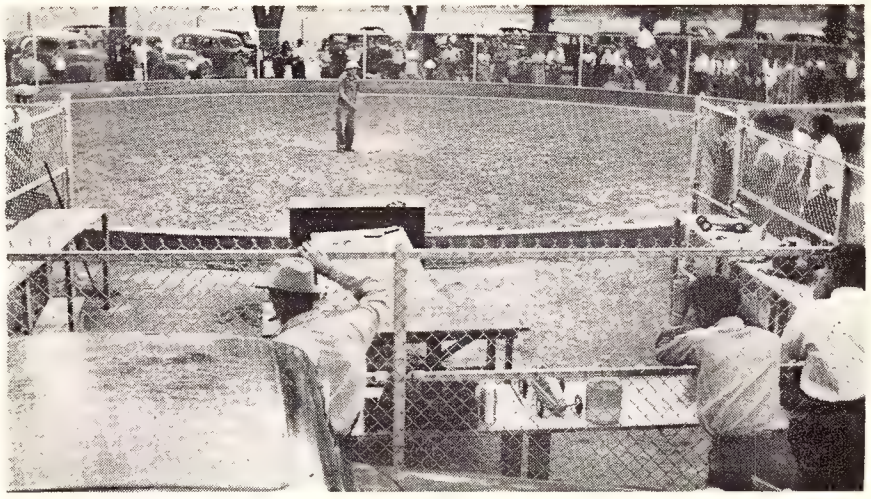
Don Fair, of the Pueblo Club, shoving off!

NEWS OF PUEBLO

NOTHING much to report from Pueblo, Colo., the boys are now spending most of their spare time in the workshop. However, they are having a trophy race the last Sunday in each month and in January will award the trophy to the fellow who has won it the most times. This system was first started in October when the trophy was won by Gil Thurston. Ken Delaine took second place and Ray Kloepfer came in third. The current owner of the trophy is Tobe Perry.

The Pueblo boys are busy drawing up plans for another Intermountain Race to be held next summer. They promise that the track will be in first class shape and there will be plenty of trophies.

Colorado Springs has gotten the "go ahead" from their city for a new race track. As soon as a suitable location has been found, the *city* will build the club a new speedway.



The Pueblo, Colorado, cable track and pits showing their new fence and concrete crash rail.

YOUNGSTOWN IN THE GROOVE

THE Youngstown Miniature Race Car Club is a new and promising organization. They were organized since July of 1947 and now boast 11 members and have two successful meets, held on their track, behind them. No speed records have been broken thus far, but many of the old timers have attained their best speeds on this track.

The members are very proud of their timing device. It is all enclosed to keep out dust and dirt, has a 3 minute watch on the left which operates with colored lights; green for starting time, amber for time half gone and red to signify that 3 minutes has elapsed, a one-hundredth of a second stop watch in the center dial and a one to twelve lap counter on the right dial which can be set for ¼ or ½ mile runs. It has a start button, a reset button and 3 toggle switches to shut off power completely. This timer was designed and built by John Bischoff, one of the club members who is an electrical engineer on large transformers. It took one year of planning to complete this device which is perfect for the purpose. The roll on the side of the timer is really wonderful, it immediately denotes the times. This was none other than Hal Schultz's idea.

The club feels that they had a very successful season of running and can report only one bad crack up. This happened when one of the members got to using too thin a wire for his bridle (watch those bridles, Leroy!). The car was repaired in one week and at last reports was doing around 100 MPH.

The club wants to thank Frank Pawlikowski, of the Chicago Rail Club, for the large roll of film he sent to them showing all about rail cars and how they operate. This film was shown at the last club meeting and was thoroughly enjoyed by all.

Pit scene at the Pueblo, Colo., Race Car Club's October race. G. Tilly at the mike. Notice that tub of refreshments! ←

A circuit of Northern Ohio is now being planned for the '48 season. This will include clubs from Akron, Cleveland and Canton. In the middle of the season, they will get together with the Southern part of the State which will include the following cities: Columbus, Brookville, Cincinnati, Toledo and Zanesville. Sanctioned races are planned for every third week during the summer of 1948, so the boys in that vicinity better start overhauling, '48 will be a busy year.

MILWAUKEE CLOSES SEASON

By DON FLITSCH

THE Milwaukee MRCA closed its season on November 2 with a full program of racing. After the smell of burnt fuel had blown away, it was agreed by all that the following Sunday everyone was to come out and help cover the track for the coming winter. Speaking for the fellows in our Rail Club, we really had a lot of fun this past season. Some of the old timers had a good year, but a few of the newcomers really showed the short way around the sixteenth mile track.

Don Obernesser, the youngest member of the club, proved this to everyone. He won quite a few races with a car of Conventional body built on a Richter frame. His fastest time was 77.38 mph and he finished 495 points ahead of second place Ralph Ganske in the Conventional point standing.

Al Manteufel, an oldtimer in the club, overtook yours truly in the Streamliner class to finish on top in the point standings. Number 38A held the lead until September when it developed many bugs; by the time the trouble was cleared up, Al forged ahead. Another oldtimer, Elmer Riemer, brought out a car of his own design powered by a Fox motor late in the season. The car shows promise and will be hard to beat next year.

During October, we received a new electric timer to be hooked up with our electric eye. This will make everything a snap when it comes to clocking time trials and races.

Following is the final point standings for the season in both classes of cars:

CONVENTIONAL

Don Obernesser	Richter-Hornet	1725
Ralph Ganske	Dooling-Hornet	1230
Elmer Brusk	Dooling-Hornet	605
Ted Richardson	Dooling-Hornet	430
Dick Eichstedt	Dooling-McCoy	385
John Weithofer	Dooling-McCoy	370
John Ritter	Dooling-Hornet	315
Al Manteufel	Dooling-Hornet	290
Ed King	Dooling-Dooling	285
Harold Kempfer	D-M Special-Hornet	130
Don Flitsch	Dooling-Hornet	105
Don Obernesser	Pacemaker-Hornet	95
John Weithofer	Own-Hornet	50
Claire Smith	Dooling-McCoy	50
Earl Feldmann	Dooling-McCoy	45
Earl Feldmann	Dooling Cyclone	15

STREAMLINERS

Al Manteufel	Richter-Hornet	1665
Don Flitsch	Richter-Hornet	1415
Henry Berka	Richter-Hornet	720
Don Flitsch	Richter-Hornet	460
Elmer Riemer	Richter-Hornet	325
Clyde Anderson	Richter-Hornet	250
Joe Kosler	Own-Hornet	230
Ted Richardson	Richter-Hornet	175
Martin Berka	Richter-Hornet	145

MIGHTY MIDGETS CLOSE SEASON

By A. C. LIEB, JR.

THE Mighty Midgets of Reading, Pa., closed their 1947 racing season on Nov. 2nd playing host to 45 entries. They want to express their thanks to boys of the Harrisburg Hot Rods, Washington, Trenton, Long Island, Campbelltown, Bethlehem and Phila. clubs who made the trip for the closing race.

The day started off with poor times in the first spur heat, but by the time the first proto heat was finished, some new track records were being turned in. The only first place to be held by a local club member was in the best class of all, Hot Rods, naturally! Jerry Reich came home with 90 mph tooling a Roadrunner with a Dooling "61." The new track record in Proto was set by one of the hottest men in the East, Comm. E. L. Luke. He was running his old faithful, a Pacemaker powered with a Hornet, and turned in 102.27 mph. Then the all time high for our track was set by Maryland's Mr. Anders with a Dooling "61" in a Matthews spur. He stopped the race by racking up five ones, 111.11 mph.

Hard luck man for the day was Kurt Pasler, of the L. I. club. He turned in 100 mph in a run off for 8th and 9th place, with that he could have climbed four spots higher in the winners circle.

The Mighty Midgets claim a record by giving out the "ole hardware" in a ratio of one trophy to every three cars. If you want a crack at trophies, your best bet is at the Belt Line Track in Reading, these trophies aren't "hand me downs," they are the best obtainable.

Following are the results of the closing day's race:

SPUR

Mr. Anders	Matthews-Dooling	111.11
Lt. Col. Taylor	Matthews-Hornet	105.26
Bob Kirwan	McCoy-Dooling	105.14
Sampias	McCoy-Dooling	100.11
Everitt	McCoy-Hornet	97.82

PROTO

Comm. E. L. Luke	Pacemaker-Hornet	102.27
Joe Ilg	Invader-Dooling	101.23
Carl Buser	Invader-Dooling	100.78
Howard Fox	Own-Dooling	100.55
Franny Wolf	Pacemaker-Dooling	100.00
Cosmi	Pacemaker-Dooling	99.77
Bill Katz	Dooling-Dooling	94.83
Kurt Pasler	Dooling-Dooling	94.73
Sunday	Invader-Hornet	94.73
Owen	Pacemaker-Hornet	93.75

OOPS! SORRY!

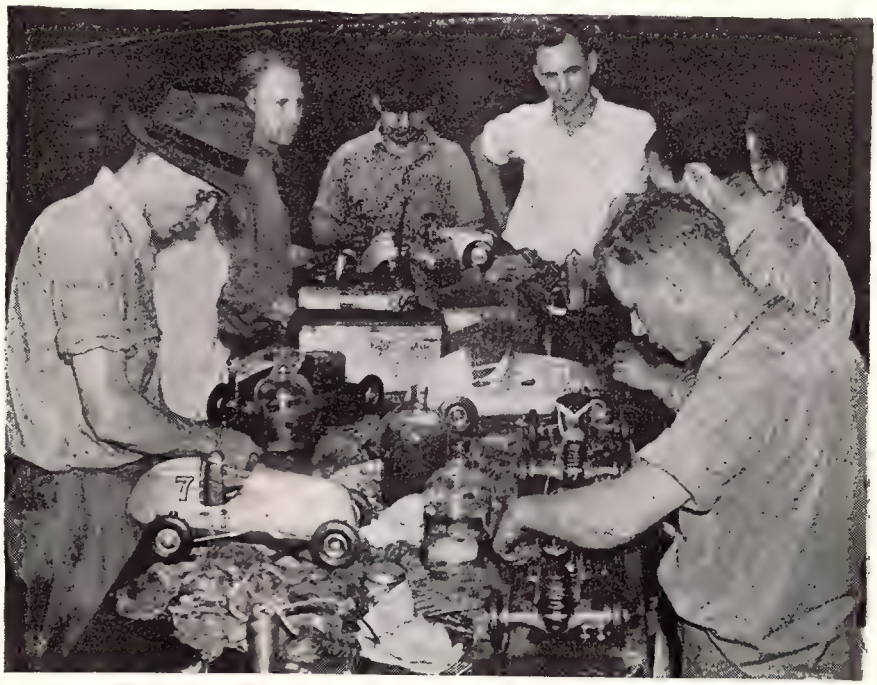
JUST received word from Jack Vanneman, of Tyrone, Pa., that we made a slight error in the September issue. It seems we stated that Bill Yocum, of Phila., was opening the first rail track in the East, when actually a four lane rail track has been in operation in Tyrone since before the war.

The track is a little worse for wear, slightly rough, but keen competition is a feature of every race. Races are held on the first and third Sundays of each summer month, their first sanctioned AMRCA race was held on Labor Day of 1942. The seasons are run on a high point basis and a small loving cup is awarded to the winner.

The boys seem a little bashful about their speeds, but they should not feel this way as they are out for a good time only. When four cars are spinning around the track in a close race, they are getting the most out of the hobby. The club wants to improve the running surface of the track and improve the facilities, but they still have a financial barrier to cross. Originally the track was promoted by Vanneman, the actual construction undertaken by a class in carpentry of the National Youth Administration, built to Dooling Brothers plans.

The track is located on Pennsylvania Route #350, 1½ miles south of Tyrone, only proto cars are run. The last regularly scheduled race was held on October 19th, results follow:

	Car #	
Vanneman (Dooling-Hornet)	0	60.34
Chronister	2	56.46
Sweet (Dooling-McCoy)	13	54.19
Seeds	33	50.25
Stever (Alexander-Atwood)	6	48.39
Kingston	3	46.43
Schmidt	7	44.30
Robinson	43	42.95



Smith Photo Service

Top: ¾ view of the Miniature Automobile Assn. of Tyrone, Pa., rail track after the races on Sunday, October 19. Below: Between races at the bench, left to right: Cliff Schmidt, Jim Kingston, Jack Chronister, Jack Vanneman, Ted Seeds and Tom Stever.

1948 BALLOT AND ELECTIONS OF THE AMRCA

By ED FITZGERALD

AS IN all elections, much depends on the issues involved and the understanding of the basic principles underlying them. You may have gathered from the report of the convention (Oct. M. C.) that very little in the way of rule changes has been proposed for inclusion on the ballot. This was done for many good reasons, mainly because there has been such a rapid growth in the membership this past year. Most men new to the game have invested in a new car and if drastic revisions were made now necessitating purchase of additional equipment, it might discourage the newcomer. Manufacturers also have expensive tools and jigs for cars designed to the present regulations.

You will find on your ballot, which should reach you about the same time that this magazine is on sale, besides the names of the men who have been nominated to serve you as officers, a proposition to change Section 1, Article 13. This rule now reads: "Sanctions for race meets are obtained by writing to the National Secretary of Regional Directors on the prescribed form. . . . There is no charge for sanctions to registered clubs; Non-registered clubs shall be charged a fee of $2.00 for sanctions."

It is now proposed to eliminate the last line from "Non-registered clubs, etc.," so that only the recognized, registered clubs may secure a sanction. There will be no charge for sanctions except the original registration fee as outlined in Section 1, Articles 10 and 11. If this suggestion is carried it will mean a much stronger organization and assurance that all sanctioned races will be run according to the rule book.

The Board of Directors and Officers, after due consideration of all the problems involved, agreed that for better coverage of races and the help of all members in general, that more A.M.R.C.A. representatives were needed. The present Constitution allows for ten Directors of Regions and two Directors-at-large. It was proposed to change this to allow one Director for each state of the U. S. which has two or more tracks or clubs within its borders. He would have the privilege of appointing an assistant if his area was too great for him to cover efficiently. This suggestion was readily received by the members in session so you will be called upon to vote for a representative residing in your own state. At time of writing, it has not been definitely decided how best to present on the ballot, but it will probably give you an opportunity to vote for first and second choice. You may vote for your favorites regardless of whether they hold or are running for office. In this way the man who polls the greatest number of votes may be able to accept the Directorship if he has been defeated as an officer.

Nominated for the office of President are the following very able and enthusiastic members: Mr. Glen Matthews, Rockford, Ill.; Mr. Fran Brennan, Monroe, La.; Mr. Stanley Prussian, Brookline, Mass.; and Mr. Wilmer White, Ontario, Calif. For Vice-Pres.: Mr. John Mayfield, Waukegan, Ill.; Mr. Howard Frank, New York, N. Y.; Col. Lotha Smith, U. S. Army; and Mr. Lloyd Baab, Oakland, Calif. Secretary-treasurer, E. D. Fitzgerald, New York, N. Y. Director-at-large (Cable), R. D. Mulhall, Chicago, Ill. Dir.-at-large (Rail), Wm. (Bill) Decker, Milwaukee, Wisc., and Hubert L. Suddeth, Indianapolis, Ind.

It is your duty to vote, so don't complain if your man does not win the post to which you would like him elected to and you haven't voted.

The *American Miniature Racing Car Assn.* looks forward to another year of racing which will bring this sport to the high place it rightfully deserves. Membership applications have been sent into Headquarters at an ever increasing rate and if it continues, by this time next year we will have reached a total enrollment of well over 5,000. This will mean bigger and better races and your Assn. will have the funds to promote greater advantages for each and every member.

For the better allotment of race dates, instruct your local club's Secretary to make up and send in a complete schedule of sanctioned race dates. This suggestion was recommended by the last convention so that the National Secretary can better allot available race dates in order that there will be no duplication or overlapping in the same locale. This is very important and Sanction requests should be filed not later than May 1st, 1948.

You will be notified at an early date the location and date of the sixth National Convention and Championship Race.

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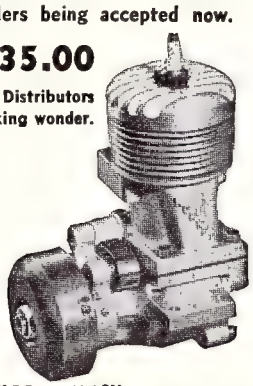

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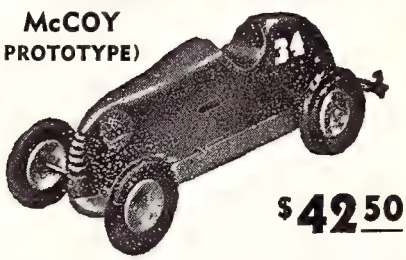

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"JES RAMBLIN"

By SENATOR CLAGHORN

Alias—Fran Brennan

IN my last article I told you fellows that I would explain how we went about getting a new track in the Monroe city park. By passing this information on to you, it will probably guide and give you helpful ideas in your own locality on getting the city fathers to furnish a permanent hobby site.

As you already know, last year the Monroe Club went to a lot of expense (just $1250) to build a track on a plot of ground that had been up for sale for fifteen years. Less than a year after the track was put in, the lot was sold from under us. (Don't let this happen to you, its mighty discouraging!) certainly we thought we had at least a few more years.

Realizing that our club had to find another site and learning that the airplane and power boat boys were being pushed all over the city, we called a

joint meeting and banded together calling ourselves "The Miniature Power Model Assn." We agreed to write a proposal to the city commissioner of Streets and Parks. Following is the proposed letter:

"The Miniature Power Model Assn., comprising approximately 250 model enthusiasts, all of the Twin Cities, respectfully submits, with your approval, this proposal for a permanent site at Bernstein Park which will be known in the future as "Bernstein Park Hobby Center."

"Attached is a rough sketch of Bernstein Park and proposed site, which, we believe, would make the best site for a Hobby Center. This land is now barren ground with a heavy growth ot weeds and debris.

"We ask that this plot of ground under the Recreation sponsorship be granted to us for the use of the proposed Hobby Center. We are not asking to have any money spent on this project, we only want the ground. Each committee of the Airplane group, Race Car and Boats will bear their expense and furnish the labor with the cooperation of Park Maintenance Crews. Without profit or any financial gain for the Miniature Power Assn., we will assure all concerned that this now barren strip will be transformed into a beautiful Hobby Center which will beautify the Park and be an asset to our community and an enjoyable recreation spot for the people of Monroe. In turn, we will promise to give Monroe national recognition and cause Bernstein Park to be visited by thousands each year from other cities. We ask permission only to use the following ground: 200 x 300 ft. for Airplanes, 80 x100 ft. for Car Races, 70 x 70 ft. for Boats and 15 x 100 ft. for Archery.

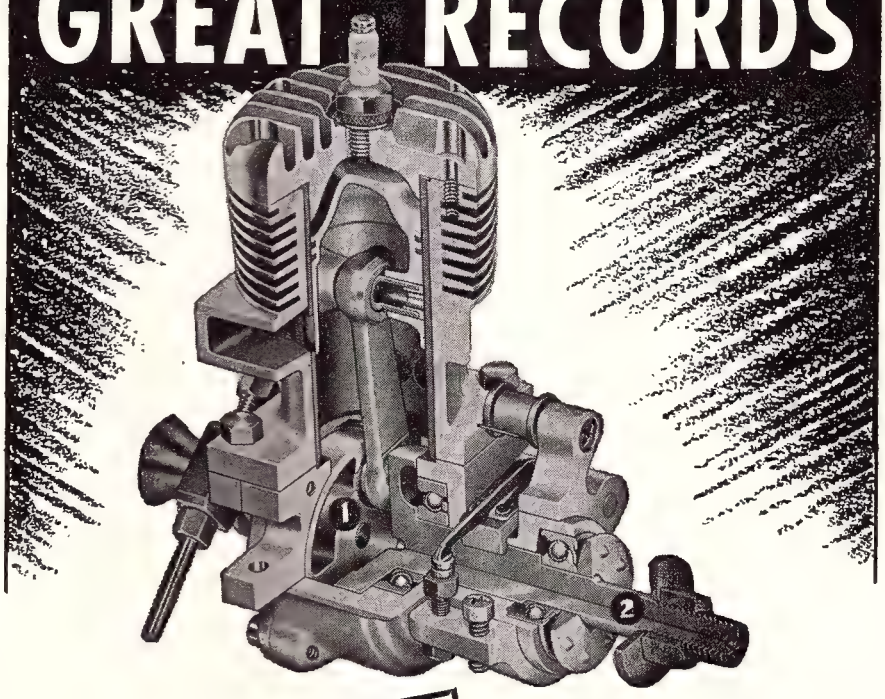
"For any further information, Mr. W. E. Lawson, Bendel Wright Clinic, represents our assn. and will be happy to give you all details.

"We respectfully request the Mayor, City Commissioners and all persons concerned to immediately take action and grant us the permission requested, notifying our Assn., by letter, if possible, of action taken. This notification may be sent to Mr. W. E. Lawson, or to the Assn. headquarters."

Well, fellows, that letter really clicked because in less than ten days we received a letter acknowledging our request from the commissioner. He assured us he would be glad to have the program sponsored by the Recreation Dept. and would give all assistance possible. The Council agreed that it was a wonderful beginning for recreational facilities and they offered wholehearted cooperation.

As soon as we got the okay, all the boys got busy and started to work! We worked at the Hobby Site, worked the merchants in town for donations and at this writing I am very happy to say that we already are running on our new cable track and it is *debt free!* Come on down South, boys, you're welcome to run day or night or any time. The track is illuminated for night racing and is one of the country's best.

Good Reasons For
GREAT RECORDS



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These are a few of many HORNET records

● Spur Gear Record, Waukegan, Ill., Sept. 1, John Crossan, V car Hornet powered, 118.27; Dale Martel, Proto Hornet powered, 113.21; Loose Memorial, Fred Luning, Spur Gear Hornet powered, 118.73; W. T. Thomas, Jr., New Spur Gear Record, Own Car, Hornet powered, at Eustis, Florida, 120.32.

● Speed Boats: Joe May, Detroit, Mich., July 4-6, 1946, new world record in Class D and E, speed 65.53 m.p.h., winning Gar Wood trophy and Model Craftsman plaque.

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Photo on the left shows the winners in the proto class at the Eustis race of October 19. Front row, l. to r.: A. L. Halloway (with Wm. Charles' car), Ivan Tarbert, K. C. Smith. Back row: R. E. King, Roy Buchart, Al Butts and D. Farley. On the right are the spur gear winners, front row, l. to r.: Bill Thomas, Jr., F. Gammo, W. Geiger. Back row: Elaine Lyme (with H. Hanson's car), A. Farley, F. La Roe and Bill Londergon.

EUSTIS RACE A BIG SUCCESS

THE Eustis, Fla., MRCA staged a very successful race on October 19th. The number of entries was a little smaller than usual, but competition was really *hot,* especially in the proto event. The speeds were not too high, but there is plenty of evidence that the Florida boys are beginning to move a little faster.

Bill Thomas gathered in first place in spur again, there seems to be no stopping him. His best for the day was 112.92. More recently he sent his car around the Jacksonville 1/16 mile track for a new quarter mile record at 116.88 mph. The Miami boys turned out in strength for this meet and really made a day of it. They took first, second and fourth in proto and also took several high places in spur. Results of this meet follow:

PROTO

William Charles	Fox-Dooling	102.73
Ivan Tarbert	Fox-Dooling	101.35
K. C. Smith	Pacemaker-Dooling	101.23
R. E. King	Fox-Dooling	97.61
Roy Buchert	Own-Dooling	96.25
Al Butts	Invader-Hornet	93.07
D. Farley	Own-Hornet	92.40

SPUR-GEAR

Bill Thomas	Own-Hornet	112.92
F. Gammo	McCoy-Hornet	104.40
W. Geiger	McCoy-Hornet	97.93
A. Farley	McCoy-Hornet	94.53
H. Hanson	V-Car-Hornet	88.32
F. La Roe	McCoy-Hornet	86.78
Bill Longergon	McCoy-McCoy	85.71

Don't forget the second annual "Mid Winter Open" race to be held in Eustis on February 22 and 23. The race will be sanctioned by the AMRCA and will be run off with spur gear ¼ mile heats on the 22nd and proto on the 23rd. Racing on both days will begin at 9 A. M. Two heats are scheduled, with a third heat run if time permits. Trophies will be awarded through 15th place in both classes. Entry fees are set at $3.00 per car entered.

The Eustis club has built a new timing house and refreshment booth to improve their track setup. Don't worry about the track being rough, a new running surface will be ready for the big event together with new pit benches. Again this year the club will award $50 to the contestant traveling the greatest distance expressly to enter the meet. For additional information, contact Ed Stone, P. O. Box 1238, Eustis.

RICHLAND COMPLETES TRACK

THINGS are really beginning to hum in Richland, Washington, with a new track in operation. Many people in that vicinity had never heard of miniature racing cars and the majority had never seen them run. It was hard to convince them of the speeds possible. Now that the Atomic City track is in running condition, several of the former skeptics have been bitten by the bug, construction of six new cars has been started since the track was completed.

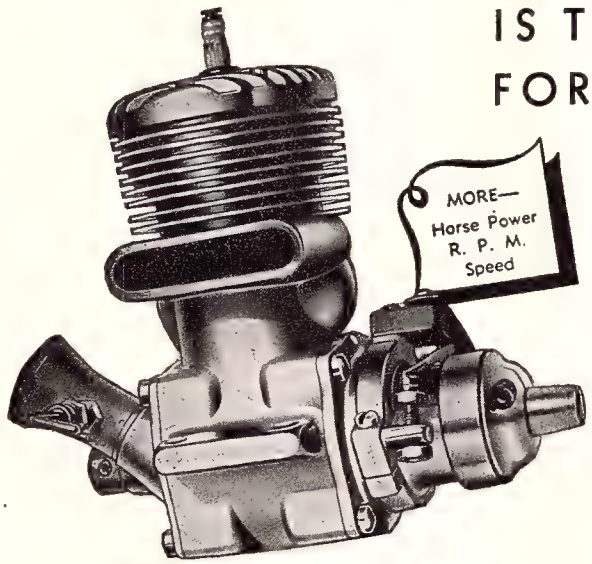
The majority of the boys are newcomers to the racing car game, previously airplane fans and looking for new fields to conquer. Under the guidance of the "old timers" (those who have had a car that will run under its own power) they should get along fine. C. L. "Pappy" Poe is to be commended for the way he has helped to get all the boys started. Pappy used to race in California and knows a few tricks of the game.

Johnny Corder, V.-Pres., and Walt Kennedy are having quite a feud as to who has the fastest car. Both have identical "mills" but so far Johnny is one up. Kennedy still has a few tricks up his sleeve and promises to keep the feud alive.

Wallace and Warren Howell, identical twins, will soon have their own car on the ribbon. They are burning the midnight oil to get it finished up and running. Old timers at this model business, they continually agree to disagree with each other, but the rest of the boys better beware, they'll come up with a *good* car.

The first practice meet on the track was run off in good style and the times were not too bad considering the cars were untested and a 3/32" cable was used.

MAKE IT "DOOLING"— IS THE RULING FOR WINNING



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Congratulations to Allan and Kitchens (and their DOOLING power plants) for coming away with first honors in the Minneapolis Nationals — speed, 133.33 MPH! Ditto for firsts in meets at Tucson, Rockford, Detroit International and Joliet, Illinois. That's breaking out in a rash of wins. Swell flying fellows, and thanks for the telegram.

The following are figures on the recent National Cable Races, Indianapolis. Track stuff (Proto) and DOOLING "61" engines, naturally. Quarter-mile, first, F. A. Robertson—116.13 (new official record); half-mile, first, Art Poore—112.94 (new official record); one mile, Art Poore —112.25 (new official record). Results on points: 1st, F. A. Robertson of Dallas, Texas; 2nd, Art Poore of Los Angeles, California; 3rd, Norb. Jannsen of Los Angeles. Keep 'em revving.

—The DOOLING REPORTER

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The track should be plenty fast once the cars are tuned and the proper cable obtained. Following are the speeds made at the first practice meet:

SPUR GEAR

Walt Burnham	McCoy-McCoy	91.5
C. L. Poe	McCoy-McCoy	85.5

PROTO

H. R. Swenson	Dooling-Dooling	89.5
C. L. Chapman	McCoy-McCoy	85.5
J. W. Corder	Dooling-Hornet	82.0
Cliff Judd	McCoy-McCoy	78.0
Ed Murphy	Dooling-McCoy	75.5
Dr. J. C. Moffat	Pacemaker-Hornet	75.0
W. M. Kennedy	Dooling-Hornet (Mag).	75.0
Paul Nelson	Dooling-Hornet	73.5
Wilmer McKune	Dooling-McCoy	56.0

NEW TRACK IN PA.

A NEW track has just been completed in Perkasie, Pa., by the Flying Hornets Racing Club. It is a beautiful concrete cable track with no seams, reinforced with steel rods. The present track record is 92 miles per hour held by Bob Jones and Karl Lachman with Dooling and Invader cars powered by Hornet motors.

The club was organized in 1945 and now has 35 active members. Races are held every Sunday with speeds being boosted each meet.

PRESENT SPEED RECORDS

THIS is your standing box score representing AMRCA speed records as of November 15, 1947. These are the present existing records as reported to this office, showing highest speeds established on both cable and rail tracks, type of car and engine used, together with location and date of established record:

1/16 MILE CABLE TRACK

SPUR (¼ Mile): Dick McCoy, San Francisco, July 7, 1946—116.73 MPH (McCoy Car, McCoy Engine)

PROTO (¼ Mile): Howard Lee, San Francisco, July 7, 1946—108.95 MPH (Own Design Car, Hornet Engine)

1/24th MILE CABLE TRACK

SPUR (¼ Mile): M. L. (Red) Davis, New Castle, Sept. 28, 1947—125.18 MPH (Borden-Dooling)

SPUR (½ Mile): Warren Borden, Waukegan, July 6, 1947—120.89 MPH (V-Car-Hornet Engine)

SPUR (1 Mile): George Coffield, Rock Island, Ill., Aug. 16, 1947—118.65 MPH (Coffield-Hornet)

PROTO (¼ Mile): Frank Robertson, Houston, Aug. 17, 1947—116.12 MPH (Own-Dooling)

PROTO (½ Mile): Art Poore, Inglewood, Cal., Aug. 15, 1947—112.92 MPH (Own-Dooling)

PROTO (1 Mile): Art Poore, Inglewood, Cal., Aug. 17, 1947—112.25 MPH (Own-Dooling)

1/20th MILE CABLE TRACK

SPUR (¼ Mile): Stu Aleshire, Bakersfield, Sept. 28, 1947—121.95 (Own-Dooling)

SPUR (½ Mile): Stu Aleshire, Bakersfield, Sept. 28, 1947—121.29 (Own-Dooling)

SPUR (1 Mile): Stu Aleshire, Bakersfield, Sept. 28, 1947—119.40 (Own-Dooling)

PROTO (¼ Mile: A. W. Smith, Bakersfield, Sept. 28, 1947—118.26 (Own-Dooling)

PROTO (½ Mile): A. W. Smith, Bakersfield, Sept. 28, 1947—118.03 (Own-Dooling)

PROTO (1 Mile): A. W. Smith, Bakersfield, Sept. 28, 1947—116.09 (Own-Dooling)

1/16th MILE RAIL TRACK

STREAMLINER: W. Weller, Chicago, Aug. 25, 1946—79.30 MPH (Hornet Engine Used)

PROTO: Elmer Wheeler, Chicago, Aug. 9, 1947—81.30 MPH (McCoy Special—McCoy Engine)

1/12th MILE RACE TRACK

PROTO (¼ Mile): Dick McCoy, Fresno, Cal., July 6, 1947—95.13 MPH (Own Car, McCoy Engine)

(Jim Gilmore holds the present speed records in the Streamline Class for both 1/24th and 1/16th mile cable tracks.) (Special Hornet)

L.I.A.R.S. END SEASON

THE Long Island Auto Racing Society completed its racing season with a closed meet for members only, held at the East Meadows Track on October 26th. The meet was AMRCA sanctioned.

Top honors went to Fred Luning with his spur gear car at a speed of 120.32 mph, thereby establishing a new track record. Proto honors went to Howard W. Frank with a speed of 104.77 mph who bettered his hold on the Deus Trophy.

First place trophies were donated by "Stan," of the Lighthouse Tavern, who also arranged for the superb dinner party held after the meet for members and their guests.

Following are results of the last meet of the 1947 season:

SPUR GEAR CLASS

1.	Fred Luning	McCoy-Dooling	120.32
2.	Fred Luning	McCoy-Hornet	117.80
3.	H. W. Frank	McCoy-Dooling	113.49
4.	Alex Remez	McCoy-Hornet	112.07
5.	Bill Wellenberg	McCoy-Hornet	110.70
6.	Frank Luning	McCoy-McCoy	109.09
7.	F. Pogachnic	McCoy-McCoy	109.09
8.	Frank Wolf	McCoy-Hornet	108.04
9.	Walter Remez	McCoy-Hornet	107.14
10.	Joe Gorski	McCoy-Hornet	105.01

PROTO CLASS

1.	H. W. Frank	Invader-Dooling	104.77
2.	Frank Wolf	Pacemaker-Dooling	103.56
3.	Fred Luning	Invader-McCoy	101.80
4.	Frank Luning	Invader-McCoy	101.12
5.	W. Martine	Own-Hornet	100.55
6.	Bill Flinn	Pacemaker-Hornet	100.44
7.	Rudy Winscher	Own-Hornet	98.03
8.	Tom Melahn	Invader-McCoy	96.56
9.	Alex Remez	Pacemaker-Hornet	95.64

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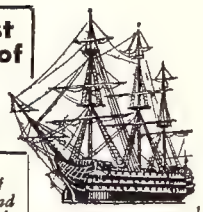

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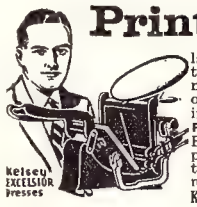

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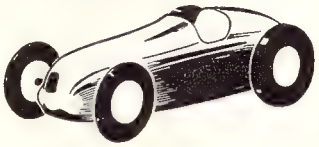

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MONROE CLASSIC

Once again the weather was a major factor at the Annual Classic held in Monroe, La. It rained three full days before the meet but managed to clear up by noon of Nov. 11th, the day of the classic.

On the Sunday preceding the meet speeds of 128 to 132 mph. were made, but due to the very high humidity, times turned in at the meet dropped. Sixty cars were entered in the race, 33 protos and 26 spurs, all top-notchers in the race car field. All the boys had a swell time and said that the track was the best in the country, even better than Waukegan. The Monroe boys worked very hard to get the track in shape for the race, it was completed only ten days before. Because of their fine track located in Bernstein Park, the Monroe club has made a bid for the 1948 AMRCA Nationals.

Following are the results of the classic:

SPUR

George Coffield	123.96
George Crossan	120.96
Glen Matthews	120.80
Al Winters	120.00
Doc Fleener	119.20
J. R. Wetzel	118.71
Jack Ray	118.57
John Coppage	116.12
Carl Stump	115.08
John Vick	113.92
Bill Arnold	112.78
Carl Myers	110.29
Frank Matthews	109.28
Fran Brennan	105.26
Otis Cline	104.04

PROTO ¼ mile

Doc Fleener	117.95
Red Davis	116.12
Jack Coppage	115.23
Bill Arnold	115.08
W. W. Betts	113.78
Frank Robertson	109.48
John Crossan	108.95
Frank Skerbenie	108.82
Jack Hopton	107.91
Frank Matthews	107.78
Earl Stump	107.39
Henry Huymann	107.14
Gus Meyer	105.63
Bill Wunderlick	103.21
Jack Ray	102.62

JAX NAVY MEET

By H. A. Hazard

The Second Jax Navy MRC Meet turned out to be quite a success in spite of the showers. Some good times were turned in considering the long distance of the 16th mile track. Mr. W. T. Thomas broke the quarter mile record for the 16th mile track with 116.88 mph. Breaking records is fairly routine with Thomas, he's a hard man to beat. There was also very keen competition between the protos.

At this race of November 5th, there were two heats for both proto and spur, the quarter and mile events. Eustis, Daytona and Jacksonville clubs were well represented at the meet, with only three hands from the Jax Navy entered. The Jax club expects to put on at least four sanctioned meets in '48 which will probably be at intervals of three months and will not conflict with other local clubs.

Chief Hubbard, one of the mainstays of the Jax club, has been ordered to San Pedro, Calif. for further assignment. He'll pull six months duty in the Los Angeles area and hopes to pick up some of the finer points of racing from the California boys.

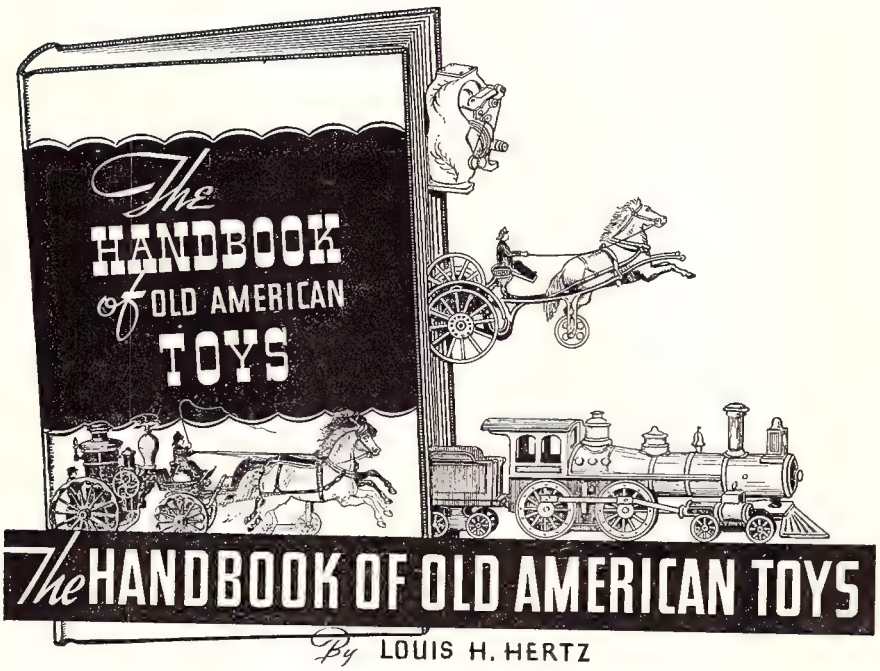
Darrell Farley was the hard luck man of the race. His proto broke in half about a half turn before she peaked, it was a heartbreaker. Results of the mile events follow:

PROTO

K. C. Smith	Pacemaker-Dooling	107.04
G. T. Hubbard	Own-Dooling	106.63
F. Ironmonger	Pacemaker-Dooling	103.77
Ed Stone	Invader-Hornet	102.44
C. M. Johnston	Invader-Dooling	100.86
Al Butts	Invader-Hornet	95.53
M. K. Farney	Dooling-Dooling	92.90
J. Robinson	Own-Dooling	90.56
G. Robinson	Invader-Hornet	83.56

SPUR

W. T. Thomas	Own-Hornet	116.58
G. T. Hubbard	McCoy-Hornet	103.95
W. Geiger	McCoy-Hornet	103.53
N. Clayton	Own-Hornet	102.79
A. Farley	McCoy-Dooling	100.55
F. La Roe	McCoy-Hornet	95.53
B. Landergan	McCoy-McCoy	93.87
L. G. Diggett		81.31
Pete Smith	McCoy-Hornet	80.69



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PHOTOGRAPHING MODELS

Every month we receive many photographs from clubs and individuals which we are unable to use. It is not that we do not wish to give the various clubs and modelers all the publicity we can, but because the persons who make the photos do not realize that a shot which makes an excellent portrayal of what it represents, does not always contain the essential qualities which are necessary for reproduction in a magazine. For this reason we have to return, with sincere regrets, many pictures of real interest to our readers because there is either not enough contrast or because one side of the picture is full of high lights while the other has almost nothing in it but shade or various grays which do not reproduce satisfactorily.

We would suggest any prospective contributor who is inexperienced in photography to consult one of the many handbooks on the subject or enlist the aid of a competent man. Either source will give valuable tips on lighting and grouping which has so much to do with the satisfactory appearance of the finished picture.

HEADLIGHT REFLECTORS

A model locomotive has a more realistic appearance by throwing a concentrated light-beam. This is easily accomplished by using the small round type bulbs and first painting the back half with aluminum which will act as an additional reflecting medium. Then upon drying, a coat or two of paint is put on top of the aluminum to match the color scheme of the area.

DRESSING GRINDING WHEELS

WHEN a small grinding wheel becomes glazed, loaded with soft metal particles or out of balance, it can be easily and quickly brought back to its original fast cutting, smooth running condition by using an old discarded table knife as a dressing tool. The spring in the knife blade causes chatter which will dress the grinding wheel surface by digging in and breaking off very fine chips.

To give the blade the proper spring, the tool rest of the grinder should be adjusted to about ¾" from the cutting edge of the wheel. With the grinder running at normal speed, the tip of the knife blade is brought up to the wheel and the vibration or chatter will cause the blade to quickly dress the wheel surface so that it will cut like new and also balance it to run dead true.

After the cutting face of the wheel has been dressed smooth and is running true, the tool rest should be readjusted to about 1/16" away from the face of the wheel. Never use the grinder with the tool rest more than ⅛" away from the wheel as work might get caught between the wheel and the rest and cause the wheel to crack and fly apart. With the wheel traveling several thousand rpm's, a serious accident could easily result. As the wheel wears down from use, the work rest should be moved up close to the wheel.

Avoid over speeding the wheel. The higher the speed, the greater the danger of breakage from pressure of the work.

It is not considered good grinding practice to use the sides of straight wheels. Thin wheels of soft, poor grades can be easily broken. It is also well to stand to one side when starting up a wheel in case it has developed a crack since last in use. The grinding wheel should never be used without wearing a good eye shield or the proper type of grinding goggles.

NOTICE

It seems our proofreaders were asleep at the switch closing the November issue of MODEL CRAFTSMAN. The correct name of Roy J. Nelson's model railroad is Yew Nork Tencral," not "New York Central" as published in the November Pike Registry Bureau.

LAYING OUT GRADES

Though we all make our start in the model railroad game with a flat layout, not very ambitious, it is not long before the sameness of the operations gives rise to a feeling of dissatisfaction and an ambition to possess something more nearly resembling the real thing, both in its methods of operation and also in the manner in which it is laid out. Very often the beginner in miniature civil engineering falls into the natural error of making a loop of either two or four tracks, which, except for the fact that there are many crossovers, has little to recommend it over the original one.

For the owner of a small place, who is rather cramped for room, a single track road, with passing tracks at stations, will give a great deal more fun and require only a fraction of the labor and expense needed to complete the multiple track road. The single track lends itself admirably to a layout having several levels, with their attendant grades and bridge crossings. In laying out an up-

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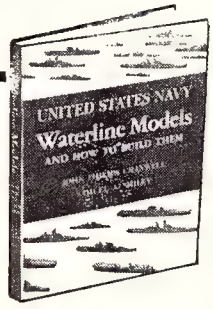

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grade, which generally has to cross another track, the difference in height should be not less than six inches to allow for clearance, and the material of the bridge itself. This may be accomplished in about seven feet of track if the locomotives have not too high a gear. Twelve to one, with any of the motors generally used, will haul five or six scale passenger cars, in O gauge, provided the locomotive has sufficient weight to prevent the motor from spinning the wheels. When the grade has to connect two tracks already in place, measure from both rail levels to the floor, and subtract one measurement from the other. This will give the total climb to be made by the train. If it appears too steep, it may be necessary to build a spiral—either on a trestle or running into the scenery through a tunnel—so as to enable the locomotive to "make the grade" with a train.

PAINTING THAT MODEL

Paint consists of three substances in combination, first the vehicle (usually an oil), second the pigment or coloring material and third the drier which assists the vehicle to harden faster.

When selecting colors from the sample cards issued by all paint manufacturers, it should be remembered that although the color is the same as that of the paint itself, its appearance changes with the type of material to be painted and also that its depth may be greatly influenced by the adjoining colors on the sample card.

Oil paints usually consist of white lead or zinc oxide together with the necessary amount of coloring matter mixed with oil. This paint will give a rather flat finish which can be varied by adding turpentine or raw linseed oil. Raw oil reduces the flatness, producing a semi-gloss, while turpentine cuts the gloss and produces a flat finish to the paint. It is advisable to use raw linseed oil instead of turpentine for outside work or cellars as turpentine has a tendency to affect the waterproof qualities of the paint. If a really glossy surface is required, enamel is used which consists of coloring matter mixed with varnish and a little raw linseed oil.

Pike Registry Bureau

AZUSA, CUCAMONGA & ANNEHIEM R. R.—A. T. Caret, Tacoma 6, Wash. (HO)
CENTRAL PACIFIC RAILROAD CO.—James B. Andrews, Wilmette, Ill. (O)
CENTRAL UNION RAILWAYS—A. T. Caret. Tacoma 6, Wash. (HO)
ELGIN, JOLIET & EASTERN RY. (the)—Charles Cornish, Elmhurst, Ill. (HO)
F. & D. TINPLATE ROAD—Donald La Spaluto, Queens Village, N. Y. (Tinplate)
HUNTINGTON CONNECTING R. R. (THE—Peter Meinersman, Huntington Station, N. Y. (OO)
NEWARK MODEL R. R. CLUB—40 Darcy Street, Newark, N. J. (OO)
RENO VALLEY R. R.—C. E. Berringer, Reno, Penna. (Tinplate)
TAMALPAIS VALLEY RAILROAD—Richard & Vivian Carr, Marin City, Calif. (HO)
WELCOME VALLEY—James A. Scruggs, Chicago 24, Ill. (O)
WEST COAST LINES—Erving Lange, Willamina, Oregon. (O)

CHICAGO HOBBY SHOW CANCELLATION

Campbell-Fairbanks Expositions, Inc., in a letter to MODEL CRAFTSMAN desires to state that the cancellation of the Chicago Hobby, Crafts and Science Show was made necessary by the fact that there were insufficient exhibits for a well rounded exposition. Decision to cancel the Show could not be reached until late in October when the November issue of MODEL CRAFTSMAN, mentioning the Chicago show, was on the press. Statement was made to the Chicago area newspapers of the cancellation.

We deeply regret any inconvenience that persons who did not learn of the cancellation in time may have been put to.

LAYOUT DOCTOR

(*Continued from page 23*)

from the station, which also leads to the engine terminal. I would preserve two switching tracks into this lead track so that locomotives could be disconnected at either end of the trains and proceed to the engine terminal without moving the train. This could be handled later by a switch locomotive.

I would also construct a new *main line* track leading off the outside main line near the lower left hand corner, and have it cross the other two main line tracks on a bridge, pass through the hill in the center of the platform via a tunnel, cross the road and rejoin the main line in the cut at the right hand side of the layout. This would provide a reverse loop so that the trains could be reversed in and through for more flexible operation. Mr. Barkley makes the mistake that most model builders make, that is, once his trains are set up they have to continue in the same direction indefinitely. There are no wye tracks on which the train can be turned and seeing the same trains going in the same direction all the time eventually becomes monotonous. By use of the suggested reverse loop track, this layout could be on a point-to-point system out and into the same station, with a selection of routes where the trains could make three, six or more laps in one direction and then over the reverse loop and back into the station on schedule.

NATURAL ROCK FINISH

When the framework for your layout has been completed and the plaster is laid on, the next problem confronting the scenery builder is to produce a natural rock finish upon which to spread his paint. Many different systems have been tried and all are successful to a degree depending on the operator's skill. The regular painter's method of sponge stippling combines ease of accomplishment with results which are very close to nature in appearance.

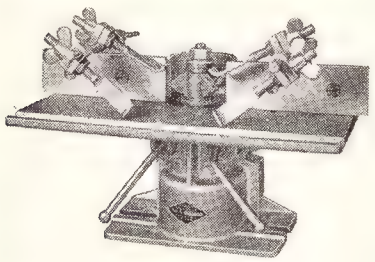
The first requisite is a perfectly clean surface upon which to work. It is particularly important that there should be no trace of paint or paste present. The

first coat consists of a coat of flat wall paint of the desired base color which should have a little size mixed with it to make the paint stiffer and to seal the tiny holes in the plaster beneath. The stippling paint may be obtained from most hardware stores, it is then poured into an open pan, the sponge dipped into it, after which the excess paint is shaken off. The stippling is effected by patting the flat sponge against the surface of the base coat taking care that the sponge is not dragged or twisted during the process. After the sponge has been loaded several times, you will be able to judge the number of times the sponge can be applied without reloading. Count the number of times to each load and always keep them the same. The stippling will then be uniform. Stagger the prints of the sponge, filling in the spaces between afterwards. Any attempt at working systematically in a line will make ridges which will detract from the appearance of the finished job.

COMBINATION SHAPER

A shaper just placed on the market by Redford Specialties Co. combines in one compact, precision-built unit the full facilities of a shaper, joiner, planer and sander. It may also be used for drilling.

To combine strength with light weight, the base is an aluminum casting. The shaper has a ball bearing spindle and is equipped with New Departure double seal bearings which require no oiling. All steel parts except spindle and quill are cadmium plated.



Primarily, it was designed as an inexpensive all-purpose tool for the home workshop but should also prove to be an ideal piece of auxiliary equipment for the large wood working shop. The spindle is ½" and will handle all standard cutters, planing tools and sanders.

THE PROPER USE OF FILES

Every hobbyist uses files and although they get the results they are looking for, the results are often obtained at the cost of a great deal more labor than is necessary.

Files can be divided into two main classes; first, those which are used for removing material or "roughing down," and secondly, those which are used to finish up the surface after the worst of the material has been removed. Neither type should be used for the class of work for which it is not intended, as the two are really different tools and are not interchangeable. The greatest mistake the beginner makes is in thinking that a selection of good files is not necessary, he

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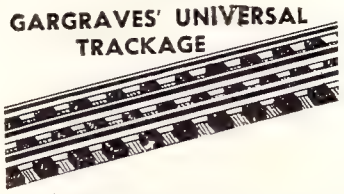

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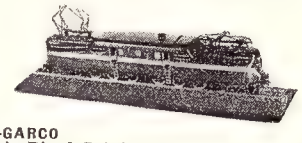

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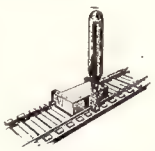

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expects one file to fill all his needs, rough-material, leveling surfaces and finally to put the finishing touches on completed work.

For removing material in any quantity, a smooth file is a waste of time. The best investment you can make for this purpose is a large, coarse, flat file. Use long strokes and lots of pressure and you will never miss the milling machine. The heavy teeth cut deeply, do not fill up with metal and are strong enough to stand up to the pressure which would soon destroy the fine edges of a smoother file.

For finishing surfaces, the smooth files should be used. The size should be kept as large as possible as there is less difficulty in holding a long file level, due to the greater distance between the hands of the operator. A good finish can be obtained without using one of the extremely fine files if care is taken to keep the face free from chips. Chips are the cause of most of the badly scarred surfaces one sees. Another cause of bad finish is the habit of dragging the file over the work on the back stroke. The file should always be lifted from the surface at the end of the cutting stroke

ROOF SIGN KIT

Winnell Specialties of Newtonville, Mass., are manufacturing Roof Sign kits in all gauges to add the finishing touches to model towns and layouts. The kit contains an ample quantity of materials to make signs including ladder strip, letters of plastic, wire and wood strips. To add a colorful note, the letters may be painted with luminous paint so that they will glow after dark.

MODEL RR NEWS

(*Continued from poge 4*)

switches, sidings and yards. It is an O gauge layout with outside third rail, 24 volts A.C. power. The club, founded in 1943, is located at 676 St. Catherine St., West. Anyone wishing further information should contact the Secretary, W Sharples, Phone # FI 2501.

BROOKLYN, N. Y. The Bay Ridge Model Railroad Club is newly organized and are doing their best to locate more fans who would be interested in membership in their club. With few members, the cost of their clubroom is quite expensive. Anyone desiring more information of this O gauge club should contact Obed I. Lidbeck, Sec., 1649 Brooklyn Ave., Brooklyn 10, New York.

LOS ANGELES, CALIF. The Fourth Annual Meeting of the Pacific Coast Region of the NMRA will be held December 7, at the Eastbay Model Engineers Society clubrooms, 4075 Halleck St., Oakland.

At this writing, the host club has not worked out a definite program, but does promise visiting rails plenty of operations on their O, HO and Trolley systems. Election of four members to the Executive Committee is the principal business of the meeting.

CAMDEN, N. J. The addition of a ten wheeler, a Pacific, six new freight cars and the rehabilitation of the Delaware and Susquehanna right of way has recently been completed by the West Jersey Railroad Club. This has left their system in better condition to handle the heavy winter coal traffic. The Club rooms, located at 639 Clinton St., Camden, are open every Friday night.

UTICA, N. Y. The Mohawk Valley Model R. R. Club have recently gotten a big boost in their rent, it is now so high they will be forced to move. The beautiful layout they have been planning and working on will probably never materialize. We wish them the best of luck in finding new quarters.

SANTA BARBARA, CALIF. The Channel R. R. Club held their annual Fall show on November 7, 8 and 9. Many changes in their layout were made. A fake wall was blasted through to make room for additional trackage and a crossover on the mountain division was taken out as it created a hazard to the yards underneath. Point-to-point operation was a feature of the program, all members brought in their pet "O" gauge equipment for the show.

BELLWOOD, ILL. The Board of Park Commissioners have extended W. W. Haverly an invitation to exhibit his model railroad, "The Little Southern," this coming Xmas season. Bill's railroad, one of the country's oldest, is in O gauge and has over 3000 feet of track with 300 pieces of rolling equipment. (34 locomotives, steam, Diesel and electric.)

The railroad will be set up in the Community Building Ball Room on Dec. 27th and there will be no admission charge. The Park District considers this kind of work to be a community asset and therefore are in hopes that a large number of modelers will be on hand.

Bill was the first president of the NMRA and was one of the outstanding craftsmen of the early years of the hobby.

SYRACUSE, N. Y. The Onondaga Model R. R. have reached the point in the construction of their HO layout where further progress is being delayed until more switches can be built and installed The track crew keep right on the necks of the switch building crew. The club rooms are located at 212 S. Alvord St., Syracuse.

WASHINGTON, D. C. On October 31st, Gustav Metzman, Pres. of the N. Y. Central System, presented the Smithsonian Institution in Washington with models of the famous Empire State Express, recording the progress in railroad passenger service from 1891, when the "Empire" entered service, to the present time.

The model of the original Empire State Express consists of four cars which made the first run, and the famed locomotive, "999," which established a world's record in 1893 of 112.5 mph pulling the "Empire." "999" itself is being preserved at the Central's shops at Collinwood, Ohio.

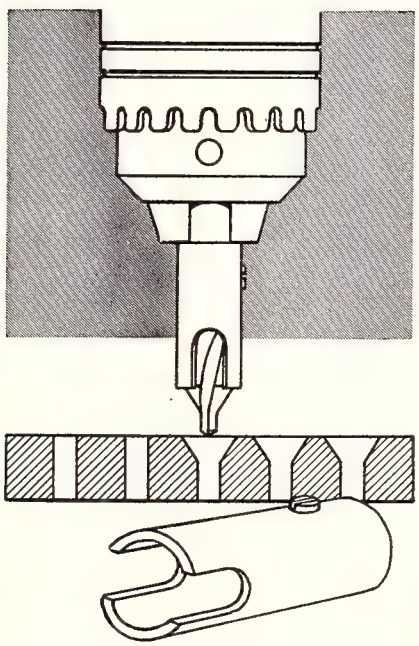
The model of the present-day train consists of six of its normal running comple-

ment of 16 streamlined cars and a streamlined Hudson-type steam locomotive. A model of a two-unit Diesel-electric locomotive was also presented to the Institution. Already in their possession is a model of the DeWitt Clinton, the first train on the old Mohawk & Hudson R. R.

ADJUSTABLE COUNTERSINK STOP

WHERE a number of holes are to be countersunk to the same depth, this little tool will be a time saver and do an accurate job.

It is easily constructed from a short piece of brass tubing with the inside diameter reamed out to fit snugly over an ordinary lathe center drill. A wide, deep slot is cut across one end of the tube, as shown in the close-up drawing, to allow free chip clearance and a small hole is cross drilled and tapped in the other end for a set screw to prevent its turning on the drill shank.



By gripping the drill shank in the chuck with the chuck jaws resting firmly against the top end of the tube, the stop can be held securely without danger of changing adjustment while in use. This will allow any number of holes to be countersunk to exactly the same diameter and depth.

LOUIS HERTZ' LATEST!

When we first saw Louis Hertz' latest book, The Handbook of Old American Toys, we started musing how many different groups of people would want to read it. There are tinplate collectors, model railroad builders who are interested in old time models, Hertz fans in general, and then, as we extended the list, we decided that everyone who was ever a boy (which is a pretty broad coverage) would find this book an absolute "must" if they ever caught a glimpse of it.

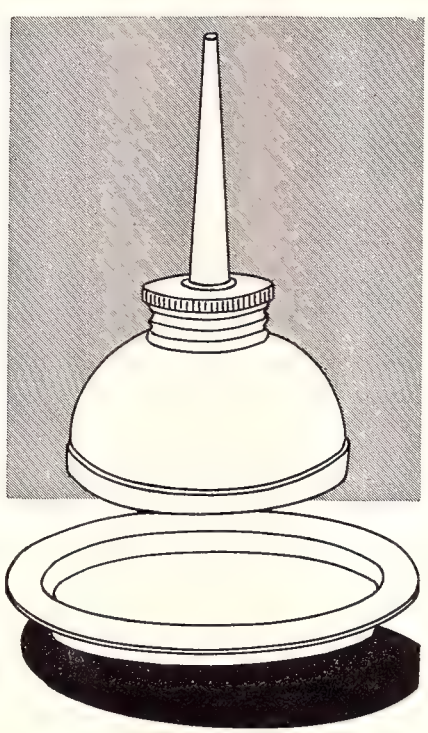
For this is a book about toys, all kinds of American toys, and from every period right down to the 1930's. There are over 500 different toys illustrated. Three generations of a family could readily find examples pictured of the toys they played with as boys.

Trains? Of course there are plenty of trains—iron, tin, clockwork, electric and other kinds, many of them never previously illustrated by Mr. Hertz. Plenty of valuable data for those who follow his department in MODEL CRAFTSMAN every month—for example, how to identify the various makes of early American clockwork track trains.

All the other kinds of toys are illustrated and described—tin toys, iron toys, steam engines, games, banks, cap pistols, musical toys, steel toys, and so on. He tells the development of each group, how to recognize the different makes and eras, and, for collectors, how to distinguish the desirable types. Here you will find an absolutely fascinating store of information and pictures, over which you'll pore for hours, bringing back happy memories of childhood—the old Ives and Lionel trains; the Buddy "L" steel dump trucks and steam shovels; the old cast iron horse drawn fire engines; the Weeden steam engines—all these and many more parading before your eyes in a book you will want for Christmas! The book is published by Mark Haber & Co. of Wethersfield, Conn., and will sell for $3.50.

OIL CAN TRAY

AN ordinary can cover of the compression type will make a serviceable tray to hold the shop oil can. It will help to keep the work bench clean and free from the customary oil ring left by the can wherever it is set down.



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The "999" in HO Gauge ..... Sept., Oct. '44
1st Prize in HO Layout ..... Oct. '44
2nd Prize in HO Layout ..... Nov. '44
Open-End Gondola Car ..... Dec. '44
HO Draft Gear ..... Dec. '44
Three HO Layouts ..... Feb. '45
C & O Mountain Type Locomotive ..... Mar. '45
Laying Out HO Pikes ..... Apr., May '45
Cement Hopper Car ..... June '45
Consolidation and Tender ..... June, July '45
"S P" A-6 Atlantic ..... Aug., thru Nov. '45
Pennsy T-1 Locomotive ..... Sept., Oct. '45
Powerful Electric Engine GG-1 ..... Oct., Nov. '45
6000 N.Y.C. Loco and Tender ..... Nov. '45
Central Vt. Loco ..... Jan. '46
C & O Hopper Car ..... Jan. '46
Southern Pacific 4-4-0 ..... Mar. thru June '46
Build a Steam Shovel ..... Nov. '46
N & W Hopper Car ..... Nov. '46
Roundhouse ..... Mar. '47

O GAUGE

Motorized Wrecking Crane ..... Sept. '44
Mother Hubbard 4-4-2 ..... July '46
Suburban Double Ender ..... Sept. '46
Worm Drives ..... Nov. '46
Ten-Wheeler Loco ..... Feb. '47

OO GAUGE

Six Passenger Cars ..... Nov. '44
War-Time Car Building, Express Reefer ..... Apr. '45
Double-Deck Sleepers ..... Apr. '45

PROTOTYPE DIMENSION PLANS

Railroad Station (Plans in HO) ..... July '44
Coal Breaker ..... Nov. '44
"Old Time" Railroad Station ..... Dec. '44
Reading Camelbacks ..... June '45
Burlington's "Vista-Dome" Observation Car ..... Nov. '45
U.P. 800 Class Loco ..... Dec. '45
Erie Caboose ..... Jan. '46
C. & N.W. Pacific 4-6-2 ..... Feb. '46
B. & O. Mallets ..... June '46
Penn E-6 Atlantic ..... Aug. '46
Loco Traveling Crane (all gauge) ..... Oct. 46

RAILROAD MISCELLANEOUS

Laying Out HO Pikes ..... April, May, July '45
A Model Saw Mill ..... July, Aug. '45
Bridge Warnings ..... Nov. '45
HO Trestle ..... Dec. '45
Simple Crossing Gate ..... Dec. '45
Standard Brick Signal Tower ..... Jan. '46
How to Build Tunnels ..... Feb. '46
Bridges ..... Mar. '46
HO Coal Tipple ..... Apr. '46
A Terminal Throat ..... May '46
A Big Interurban Layout ..... June '46
V & T Passenger Station ..... July '46
Track and Scenery Foundation ..... Aug. '46
Three-Way Switch ..... Aug. '46
A Simple Interlocking Plant ..... Sept., Oct. '46
B. & O. Coal Tower ..... Sept. '46
Speaking of Water Falls ..... Oct. '46
Does Your Layout Have a Church? ..... Oct. '46
Two Rail Signals ..... Dec. '46
Where to Put Your Feeders ..... Dec. '46
Master Control Board ..... Apr. '47
Interlocking Without Relays ..... May '47

TROLLEYS

Model Cattle Car (Prototype Dimensions) ..... July '44
Shooting Trouble on HO Motor Trucks ..... Oct. '44
Trolley Wirework ..... Nov. '44
Interurban Depot and Substation ..... Feb. '45
Hudson & Manhattan Tube Cars ..... Mar. '45
Interurban Mail ..... Apr. '45
"Open Air" Elevated Railways ..... June '45
Yards, Barns and Terminals ..... July '45
Trolley Work Cars ..... Aug. '45
Trolley Snow Plows ..... Nov. '45
Trolley Front Ends ..... Dec. '45
Trolley Freight Service ..... Jan., Feb. '46
Power for Your Trolley ..... Mar. '46
Double Cab Work Car ..... Apr. '46
Pacific Electric Car (O Gauge) ..... May '46
Modeling Traction Interurbans ..... Nov. '46
Small Interurban Cars ..... Dec. '46
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Home-Made Cylinder Cocks (½" sc.) ..... Oct. '44
Atlantic Live Steamer, ¾" scale
Nov., Dec. '44, Jan., Feb., Mar., May, June, July '45
½ H. P. Horizontal Steam Engine ..... Feb., Mar., May '45
Boiler Feed-Water Pump (½" sc.) ..... Feb. '45
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Steam Driven Water Pump ..... Oct., Dec. '45, Feb. '46
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Suspension Bridges ..... Aug. '44
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Flag Stops ..... Nov. '44
"Combination" Stations ..... Feb. '45
Smooth Scaling ..... Mar. '45
Improved Tin Type Trucks ..... July '45
Realistic Tinplate Cars ..... Dec. '45, Jan. '46
Tin-Types "Trued to Life" ..... June '46
Along the Tinplate Track ..... Monthly Feature

AIRPLANES

"Tiger Meat" Class C Guide Liner (Millet & DeBolt) ..... Oct. '45
Dizzy "B", U Control (Greene) ..... Nov. '45
"Butch", Class C Guide Liner (DeBolt) ..... Dec. '45
"Moldy Molecule", Class B & C Guide Liner (DeBolt & Thomasian) ..... Jan. '46
"Thunderwin", U Control (McElwee) ..... May '46
The "Atomic", U Control (Shulman) ..... June '46
"Pirate", Control Liner (McGovern) ..... Sept. '46
Your Engines (Class A & B Survey) ..... Aug. '46
Your Engines (Class C Survey) ..... Sept. '46
Engine Maintenance ond Operation ..... Sept. '46

ELECTRICAL ARTICLES

Home-Made Telephone ..... July, Aug. '44
Battery Charging Hints ..... Aug. '44
Switch Motors from Doorbells ..... Oct. '44
Polarity Indicator ..... Oct. '44
A. C. Power Supply ..... Nov. '44
Radio Control for Model Layouts ..... Dec. '44
Crossing Gates, Electrically Controlled ..... Dec. '44
Wind Your Own Magnets ..... Dec. '44
Home-Made Rheostats ..... June '45
"Per-Mag" Switch Machine ..... Aug. '45
O Gauge Motors ..... Oct. thru Dec. '45
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Train Control Rheostat ..... June '46
Lighting Your Trains and Buildings ..... May '46
Electricity, "What is it?" ..... Jan. '47

RACE CARS

Molding Car Bodies ..... July '44
Getting Ready for Racing ..... Mar. '45
Building a Model Race Car ..... May thru Nov. '45
How to Get More Speed ..... May '45
Trouble Shooting ..... Feb. '46
What Type Racing Car? ..... Mar. '46
Test Car #1 ..... Apr. '46
Test Car #2 ..... July '46
Rail Track Construction ..... May '46
Cable Track Construction ..... June '46
Wire Spoked Wheels ..... Nov. '46
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NOTICE

The photo below is of Mr. Joe Leger, 1282 Hearst Ave., Berkeley, Calif. Joe was on the welcoming committee for the Oakland NMRA Convention and about a week later disappeared completely. His family and Berkeley police believe he is suffering from a loss of memory and that he may return to his model railroad hobby. Joe is a fine fellow and was just overworked to bring on this condition. If anyone knows of the whereabouts of this man, please contact his family at the above address or wire this magazine collect.

MODELMAKER'S LATHE

(*Continued from page 20*)

Feed the lathe by hand for about ⅛" and after stopping the lathe, measuring the cut to make sure it is not turning the work undersize. Leave about 1/32" for the finishing cut. When you are certain of the diameter being turned, throw in the power feed and turn the work to half its length; throw out the feed and then stop the lathe, but do not change the adjustment of the tool bit. Remove the work from the lathe and run the carriage back to the starting point. Change the lathe dog to the other end of the work, remount and adjust between centers and continue the cut to meet the one already made.

The finishing cut should be made with a freshly sharpened cutter bit ground with a round nose which will eliminate the tool marks of a more pointed tool.

Feed the tool to the work and make a short cut wide enough to measure with the micrometer. When the diameter is correct, throw in the power feed and turn half the length of the work. Throw out the feed, stop the lathe and remove the work. Run the carriage back to the starting point, change the lathe dog to the opposite end of the work, placing a protective piece of sheet brass under the screw, oil the dead center point and, after carefully adjusting between centers, turn to meet the cut already made. A few strokes with a fine file while the lathe is turning over at slow speed will put a smooth finish to the work.

ALONG THE TINPLATE TRACK

(*Continued from page 25*)

are some slight manifestations of it in the first versions of the very smallest locomotives and cars. It will be noted that the numbers employed by Ives in 1901 were retained for similar size models throughout the remainder of their independent existence, although the models were, of course, continually being improved and modernized. Thus the car numbers 50, 51, 54, 60, 61, 62, and 63, which appear in the 1901-02 catalog, were still employed for the corresponding models in 1930, although the 60 series had become double truck cars.

The earliest cars and tenders were hand painted and striped, however, lithography was rapidly being introduced. The earliest Ives coupler was not the familiar standard non-automatic coupler of the hook type, but a little link arrangement which will be noted on all of the four wheel cars pictured this month except for the separate No. 60 baggage car. This link was secured at one end, and dropped over a raised rivet on the adjacent car platform. There are two sizes of this link coupler, and although Ives began using the standard hook coupler on the more expensive cars in 1904, the link was continued somewhat longer on the smaller units.

Particular attention was paid by Ives to the actual vestibules on even the cheapest cars. When the lithographed cars were brought out, most of them were lettered "Limited Vestibule Express" and each passenger car had this detail included. Later, Ives did make a few cheap cars with this lettering but omitting the actual vestibule partitions. Generally speaking, they were very careful to maintain this detail. As mentioned in the September, 1946, issue, the earliest known use of the name "Limited Vestibule Express" by Ives was on a cast iron pull train car of the 1890's, and in this instance, the car was of the open end type!

A friend recently asked us off-hand how many different cars Ives put out lettered "Limited Vestibule Express" because someone had told him that this famous name appeared only on the very oldest cars, and that any car so lettered was extremely rare! We made a hasty mental computation, omitting minor variations such as roof colors, underframe lithograph details and truck types, coupler types, and similar minor points of interest only to a specialist, and estimated that Ives made upwards of fifty different major body and color car types with this lettering which somehow conveys the essence of the days of early Ives trains. It was used up to 1916, and, of course, some of the cars are quite rare while others are not too scarce.

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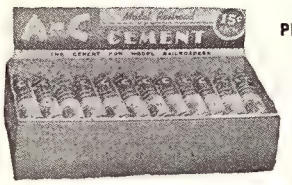

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also of considerable interest, and went through many minor changes and developments. Indeed, now that suitable quantities have come to light to make comparisons, it is amazing how often Ives modified and improved their designs. The change from a No. 25 locomotive of 1901 and that of 1910, when only those two models are viewed seems great and abrupt, but when each year's model is examined, it is found to be, if anything, subtle and very slowly evolutionary. Seemingly, until around 1917, Ives altered the patterns for their clockwork locomotive castings almost every year, adding rivets, changing the contour of a firebox or the detail of a crosshead guide, strengthening a weak spot, etc. It is here that Ives' famed constant striving for improvement is perhaps most manifest. We have, for example, noted six distinct models of the old three window to a cab side No. 25 locomotive, as manufactured 1901-08. Except for the first 2-4-0 type, the remaining five 4-4-0 models chiefly differ in wheel diameter, number of boiler bands, minor casting details, and outside or inside brake control rods.

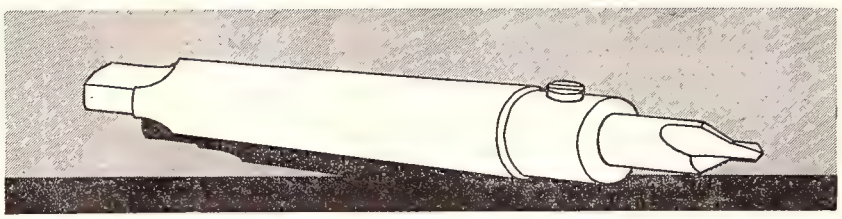
Another interesting point concerning this model is that a No. 20 locomotive was also made in the same castings and in the 2-4-0 and 4-4-0 wheel arrangement in 1901-03. It differed from the No. 25 only in that it lacked the reverse with which the No. 25 was equipped. The more familiar 0-4-0 No. 20 with a special casting of its own with two windows to a cab side was introduced in 1908 and was fitted with a reverse.

Besides the Nos. 20 and 25 locomotives, the other locomotives in the early line were the Nos. 0, 1, 2, and 3, which had tin bodies until these were replaced with castings in 1908, and the Nos. 11 and 17, which differed only in that the No. 17 had a brake. These models, too, demonstrate continual casting changes. The Nos. 0, 1, 2, and 3 differed in the adjustment of the mechanism according to the number of cars each was intended to pull, and in the finish. It is now known that the tin bodies were continued in production until at least 1910, for use in sets for the mail order trade.

ANSWERS TO PROTOTYPE QUIZ

(*Continued from page 27*)

1. Silk Hats—High railroad officials or brass.
2. Soup Line—Southern Pacific R. R.
3. Racetrack—Any straight, flat stretch of track upon which an engineer safely can make unusually high speed. Also parallel stretches of track of two competing railroads upon which rival trains race each other.
4. Cradle—Gondola car.
5. Paddle—Semaphore signal.
6. Flag—Assumed name (Many a *boomer* used to work *under a flag* while his own name was blacklisted)
7. Feathers—Fingers
8. Gate—Switch
9. Eye—Trackside signal
10. Doghouse—Caboose or its cupola
11. Graveyard—Tracks that are used to store old or damaged equipment.
12. Hog—Any large locomotive usually freight, formerly only Consolidation type. An engineer may be loosely called a *hoghead, hogger, hoggineer, hog jockey, hog eye, grunt* or *pig mauler.*
13. Fountain—That part of a locomotive where steam issues from boiler and flows into pipes for lubrication and injection.
14. Ham—Poor telegrapher, usually a student.
15. Gun—Torpedo also the injector on the locomotive which forces water from tank to boiler. The verb *to gun* means to control air-brake system from the rear of train.
16. Hole—Passing track where one train pulls in to meet another.
17. Mule—Brakeman.
18. King—Freight conductor or yardmaster. *King snips* is foreman of track gang.
19. Chisel—To switch cars
20. Greenbacks—Frogs for rerailing engines or cars.
21. String—Cut of cars; or several cars coupled together.
22. Rails—Any railroad employee
23. Crib—Caboose.
24. Goat—Yard engine.



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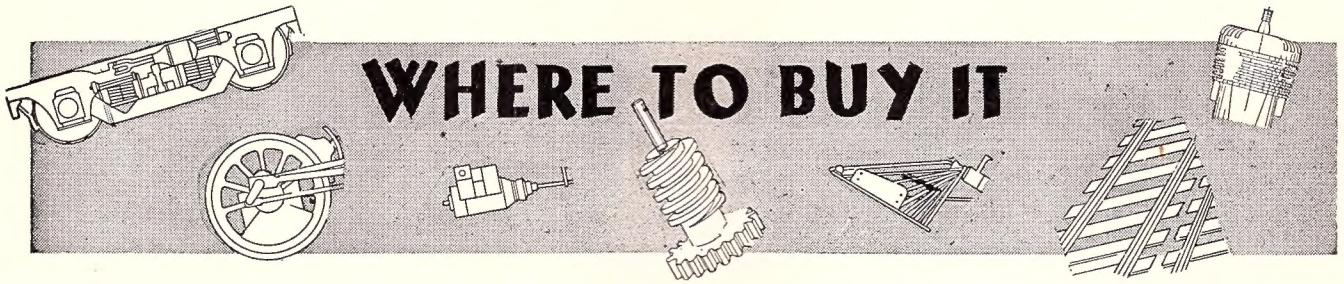

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REALISTIC ARCH BRIDGE

(Continued from page 7)

serve. When this is dry, paint all the surface with heavy-bodied, grey-enamel, light-grey, pearl-grey, dove-grey, or the like. While the enamel is still tacky, sprinkle it with fine silica sand. Sift the sand on the job from a four or five foot elevation so that the grains firmly embed into the enamel. When this dries, you'll think it's concrete yourself.

There you have it, boys! I might mention that it is also well to taper off the valley to a perspective, and any buildings or tunnel entrances near the bridge itself. In fact, if you are just starting a train layout, realism can be added by "forcing the perspective" on all structures.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of The Model Craftsman, published monthly at 1309 Noble St., Philadelphia 23, Pa., for October, 1947.

State of New Jersey }
County of Bergen } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Charles A. Penn, who, having been duly sworn according to law, deposes and says that he is the Publisher of The Model Craftsman and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, Charles A. Penn, Ramsey, N. J.
Editor, Charles A. Penn, Ramsey, N. J.
Managing Editor, James H. Thompson, Ramsey, N. J.
Business Managers, none.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)
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4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and condition under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

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CHARLES A. PENN.

Sworn to and subscribed before me this 6th day of October, 1947.

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